UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION I

IN THE MATTER OF:	)	ADMINISTRATIVE ORDER
	)	RCRA DOCKET NO: I-90-1032
	)	
Envirite Corporation	)	Consent Order under § 3008(h)
Old Waterbury Road	)	of the Resource
Thomaston, CT 06787	)	Conservation and Recovery
	)	Act, as amended,
EPA I.D. #CTD093616613	)	42 U.S.C. § 6928(h)

I. JURISDICTION

This Administrative Order is issued pursuant to the authority vested in the Administrator of the United States Environmental Protection Agency (hereinafter EPA) by Section 3008(h) of the Solid Waste Disposal Act, commonly referred to as the Resource Conservation and Recovery Act (RCRA), as amended, 42 U.S.C. § 6928(h). The authority vested in the Administrator has been delegated to the Regional Administrators by EPA Delegation Nos. 8-31 and 8-32 dated April 16, 1985.

This Order is entered into by EPA Region I and Envirite Corporation (Envirite), Thomaston, Connecticut. Envirite consents to and agrees not to contest EPA's jurisdiction to issue this Consent Order and enforce its terms.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

November 13, 1990

Stephen Smith
Vice President
Envirite Corporation
Old Waterbury Road
Thomaston, CT 06787

Re: Consent Order Entered Into Between EPA, Region I and Envirite Corporation Pursuant to Section 3008(h) of RCRA
RCRA Docket No. I-90-1032

Dear Mr. Smith:

Enclosed please find a copy of the signed Consent Order, pursuant to Section 3008(h) of the Resource Conservation and Recovery Act (RCRA), between the United States Environmental Protection Agency (EPA), Region I and Envirite Corporation (Envirite). The original document is on file at the EPA, Region I Hearing Clerk's Office.

In accordance with Article X of the Order, the EPA is designating Michael Hill as the Project Manager for this case. The alternate to the project manager shall be Gerard Sotolongo. The telephone number of Michael Hill is: (617) 573-9653. Within seven (7) days of the effective date of this Order, Envirite must notify EPA of its Project Manager and alternate as stipulated in Article X of the Order.

Pursuant to Attachment IV, Section I of the Order, Envirite must submit to EPA a RCRA Facility Investigation (RFI) Proposal within sixty (60) days of the effective date of this Order.

Sincerely,

Frank Ciavattieri

for Merrill S. Hohman, Director
Waste Management Division

Enclosure

cc: Michael Hill, EPA-WMD
[redacted]
George Miller, Dechert Price & Rhoads
Patrick Bowe, CT DEP

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

November 13, 1990

Ms. Marianna Browning Dickinson
Regional Hearing Clerk
U.S. Environmental Protection
Agency, Region I
JFK Federal Building
Boston, MA 02203

RE: **In the Matter of Envirite Corporation**
RCRA Docket No. I-90-1032

Dear Ms. Dickinson:

I am writing to report that the interim status corrective action order entered into by consent of the parties has been signed by the Respondent and has been transmitted to the Regional Administrator, EPA Region I. I anticipate filing the fully executed order sometime tomorrow.

As a consequence, the conference call with the Presiding Officer, scheduled for tomorrow, will not be necessary.

Thank you for your attention.

Sincerely,

Carol R. Wasserman
Assistant Regional Counsel
U.S. EPA, Region I

cc: George Miller, Esq.

CERTIFICATE OF SERVICE

I, undersigned counsel, do hereby certify that copies of the enclosed **Consent Order Under Section 3008(h) of RCRA** have been served, first class mail, postage prepaid, upon Stephen Smith, Vice President, Envirite Corporation, Old Waterbury Road, Thomaston, CT 06787, and upon George Miller, Esq., Dechert Price & Rhoads, 3400 Centre Square West, 1500 Market Street, Philadelphia, PA 19102, on this **13th** day of **November, 1990.**

Carol R. Wasserman
Assistant Regional Counsel

II. DEFINITIONS

All terms used in this Order are as defined in 40 C.F.R. Sections 260.10 and 264.141, unless defined in Attachment III hereto.

III. APPLICABILITY

1. This Order applies to and is binding upon Envirite, its officers, employees, agents, successors and assigns.

2. No change in ownership or corporate status relating to the Facility will in any way alter Envirite's responsibility under this Order.

3. Envirite agrees to provide a copy of this Order to all contractors, subcontractors, laboratories, and consultants retained by it to conduct or monitor any portion of the work performed pursuant to this Order within ten (10) days of the effective date of this Order or date of such retention, whichever is later.

4. Envirite agrees to give notice of this Order to any successor in interest prior to transfer of ownership or operation of the Facility, and agrees to notify EPA of such transfer of ownership or operation at least fifteen (15) days prior to such action.

IV. STATEMENT OF PURPOSE

1. In agreeing to this Order, the mutual objectives of the parties are to 1) evaluate thoroughly the nature and extent of any releases of hazardous waste or hazardous constituents at or from the Facility, 2) to gather data necessary to support the Corrective Measures Study, and 3) to conduct the Corrective Measures Study.

2. In order to meet these objectives, Envirite will do the following: (1) submit the RCRA Facility Investigation (RFI) Proposal as outlined in Attachment IV hereto; (2) conduct the RCRA Facility Investigation (RFI); (3) within 30 days of completion of the RFI, submit the RFI Report to EPA. Upon approval by EPA of the RFI Report, Envirite will perform the studies contained therein pursuant to the schedule set forth in the approved RFI; (4) develop and submit, at the same time that the RFI Report is submitted, a Media Protection Standards (MPS) Proposal which fulfills all of the requirements set forth in Attachment IV hereto; (5) within thirty (30) days of EPA's issuance of Media Protection Standards relative to the Facility, prepare a Corrective Measures Study (CMS) Proposal which fulfills all of the requirements set forth in Attachment IV hereto; and (6) upon

approval of the CMS Proposal by EPA, Envirite will perform the work contained therein to fulfill the requirements of the CMS Proposal, including the preparation of a Corrective Measures Study Report which fulfills all of the requirements set forth in Attachment IV hereto.

3. This Order does not require the implementation of corrective measures except such interim corrective measures as are necessary to remedy imminent threats to human health or the environment. However, if remedial action is determined to be necessary, upon selection of a remedy, EPA will issue a follow-up § 3008(h) order or, if a permit has been approved subsequent to this Order, implement proceedings for modification of the permit to incorporate provisions for the implementation of such selected remedy, or will take any other legal or equitable action as deemed necessary by EPA to protect human health or the environment.

V. FINDINGS OF FACT

1. Envirite is a corporation organized under the laws of the Commonwealth of Pennsylvania, is authorized to do business in the State of Connecticut, and is a "person" as defined in Section 1004(15) of RCRA, 42 U.S.C. Section 6903(15).

2. Envirite owns and operates an industrial waste management facility (the Facility) which commenced operations in 1975, in Thomaston, Connecticut.

3. Envirite services electroplaters, electroless-platers, surface finishers, steel producers, electronics manufacturers, and other industries at the Thomaston Facility by engaging in the treatment and management of hazardous wastes generated by those industries at the Facility and disposal of non-hazardous waste pursuant to the terms of the Exclusion signed by EPA on November 6, 1986 and published in the Federal Register on November 14, 1986, as set forth in 40 C.F.R. Part 261, Appendix IX.

4. Envirite owned and operated the Facility on and after November 19, 1980, the applicable date which renders facilities subject to interim status requirements or the requirement to have a permit under Sections 3004 and 3005 of RCRA, 42 U.S.C. §§ 6924 and 6925.

5. On August 6, 1980, Envirite mailed to EPA a Preliminary Notification of Hazardous Waste Activity required by Section 3010(a) of RCRA, identifying itself as a generator of, and as an owner/operator of a treatment, storage, and disposal

facility for hazardous waste. The content of that Notification and subsequent amendments to that Notification identifying the hazardous wastes handled at the Facility are incorporated herein at Attachment V.

6. Analyses conducted by EPA and Envirite of groundwater and soil at the Facility indicate elevated concentrations of certain heavy metals and organic compounds. The EPA finds, and Envirite agrees not to contest, relative to this Order, that hazardous wastes and/or hazardous constituents as defined by Section 1004(5) of RCRA and 40 C.F.R. Part 261, Subparts C and D and Appendix VIII of 40 C.F.R. Part 261, have been released and may continue to be released into the environment from the Facility.

7. EPA and Envirite agree that the Areas of Concern (ACs), the location of which are indicated on the map identified in Attachment I hereto, will be the focus, individually and/or collectively, of the various investigations and studies undertaken pursuant to this Order.

VI. DETERMINATION

Based upon the Findings of Fact set out above and incorporated herein, and after consideration of the information contained in the Administrative Record, EPA has determined, and Envirite stipulates that it does not and will not dispute the validity of the following determinations made by EPA, pursuant to Section 3008(h) of RCRA that:

1. Envirite is a person within the meaning of Section 1004(15) of RCRA;

2. Envirite owns and operates the Facility;

3. The Facility is authorized to operate under Section 3005(e) of Subtitle C of RCRA, 42 U.S.C. § 6925(e);

4. There have been and may continue to be releases of hazardous waste and/or hazardous constituents into the environment from the Facility;

5. Hazardous waste and/or hazardous constituents released from the Facility have migrated into the groundwater and soil and may still be migrating to the groundwater, soil, surface water and sediments, bedrock, and air.

6. The response measures contained in this Order are necessary for the purpose of protecting human health or the environment.

VII. CONSENT AGREEMENT

1. EPA and Envirite have agreed to the settlement of this matter without adjudication of fact or law.

2. For the purposes of this proceeding only, Envirite agrees not to contest the factual and legal bases of EPA's requirements herein under the authority of Section 3001 of RCRA et seq.

3. Envirite explicitly waives its right to a hearing on any issue of fact or law or requirement set forth in this Order, except as provided by the Dispute Resolution provisions contained herein.

4. Envirite agrees and is hereby ordered, pursuant to Section 3008(h) of RCRA, 42 U.S.C. § 6928(h), to comply fully with the terms of this Order including all requirements set forth in Attachments I through VI and Appendices 1 through IV, which are incorporated herein.

VIII. EPA REVIEWS AND APPROVALS

1. The Director will review all proposals, proposed schedules and reports submitted pursuant to this Order and will notify Envirite in writing of EPA's approval or disapproval of such document, or any part thereof. All information concerning media and ACs to be studied, work proposed, and investigations required must be provided, unless written justification and sufficient data is submitted to EPA and EPA approves the elimination of any or part of any requirement in this Order and Attachments hereto (e.g., performing soil/gas testing in conjunction with air particulate sampling in lieu of air sampling). All of the justifications for not including any information contained in this Order are subject to EPA approval. In the event of a disapproval, the Director shall specify in writing any deficiencies. For the purposes of this Article and Article IX, infra., "proposals, proposed schedules and reports pursuant to this Order" shall mean all proposals, proposed schedules and reports required to be submitted by Envirite pursuant to Attachment IV, including the RFI Proposal, the Phase I RFI Interim Report, the Phase II RFI Proposal, the RFI Report, the MPS Proposal, the CMS Proposal, and the CMS Report.

2. Within thirty (30) days of receipt of comments from EPA on any proposal, proposed schedule or report, Envirite shall submit to EPA for approval a revised proposal, schedule or report which responds to and/or remedies any deficiencies identified by EPA. If Envirite believes that the nature of EPA's comments makes resubmission within thirty (30) days

impractical, Envirite may submit, in writing, within ten (10) days of the due date of such resubmission, a request for an extension. Such request shall include technical justification for the proposed extension, and proposed schedule for submission of the revised proposal, schedule or report, or any portion thereof. The Director shall consider the merits of such requests, and may grant or deny such requests within his/her discretion.

3. If the revised submission is not approved, the Director may, within his/her discretion, either require further modifications or make such modifications as he/she deems necessary to meet the requirements for that proposal, schedule or report. In the event that the Director modifies the revised submission, Envirite may invoke the Dispute Resolution procedures set forth in Article IX below.

4. Upon approval or modification by the Director, Envirite shall implement the proposal, proposed schedule or report in accordance with the terms and conditions contained therein.

IX. DISPUTE RESOLUTION

1. If Envirite disagrees, in whole or in part, with any EPA disapproval of a proposal, proposed schedule, or report submitted by Envirite, or other decision or directive made by EPA pursuant to this Order, Envirite shall notify EPA in writing of its objections and the bases therefor within seven (7) days of receipt of EPA's disapproval, decision or directive. EPA and Envirite shall then have an additional fifteen (15) days from EPA's receipt of Envirite's objection, to meet in order to attempt to resolve the dispute. If agreement is reached, the resolution shall be reduced to writing, signed by the parties, and incorporated into this Order.

2. If the parties are unable to reach agreement within the period specified in the preceding paragraph, EPA shall notify Envirite in writing of its decision within ten (10) days after the termination of the period allowed for negotiation pursuant to paragraph 1. above. Any such decision will be made by an EPA manager of at least the level of Geographic Section Chief.

3. The time periods established by the preceding two paragraphs may be extended by EPA upon notice to Envirite.

4. Within seven (7) days of receipt of EPA's decision, Envirite shall notify EPA that it has initiated compliance with the requirements of EPA's decision. In the event that Envirite fails or refuses to comply, EPA may take such enforcement

actions as are authorized by law, including but not limited to issuance of further administrative orders, assessment and collection of stipulated penalties, and/or judicial enforcement actions.

5. Stipulated penalties shall begin to accrue from the date complete performance was due until such date as the parties conclude negotiations concerning the issue(s) for which the Dispute Resolution process was invoked, as set forth in paragraph 1. above. Thereafter, and until a formal decision is made, reduced to writing, and received by Envirite, further accrual of such stipulated penalties will cease concerning the issue for which the process was invoked by Envirite.

X. DESIGNATION OF FACILITY PROJECT COORDINATOR AND EPA PROJECT MANAGER

1. Within seven (7) days of the effective date of this Order, Respondent shall notify EPA in writing of its designated Project Coordinator, who shall be responsible for overseeing the implementation of the Order. Within the same seven (7) day time period, EPA shall designate an EPA Project Manager, who shall be EPA's designated representative with regard to the implementation of this Order. At the same time, both parties shall designate an alternate to the project coordinator and the project manager. Unless otherwise specified, all communications between Respondent and EPA, and all documents, reports, approvals and other correspondence concerning the activities performed pursuant to the terms and conditions of the Order, shall be directed through the Project Coordinator and the EPA Project Manager.

2. Either party may designate a new Project Coordinator or Manager or alternate, provided that it notifies the other party in writing at least seven (7) days prior to such redesignation.

3. The absence of the Facility Project Coordinator or the EPA Project Manager shall not be cause for stoppage of work by Envirite.

4. When a written submission is required under this Order, Envirite shall submit to the EPA Project Manager (5) five bound copies and (1) unbound copy of such submission, unless fewer copies are specified by EPA.

XI. SAMPLING

1. Envirite shall provide to EPA the results of all sampling and/or tests or other data generated by Envirite, or on Envirite's behalf, in connection with the implementation of

this Order, and shall submit these results in monthly progress reports as described in Attachment IV of this Order.

2. At the request of EPA, Envirite shall allow split or duplicate samples to be taken by EPA and/or its authorized representatives, of any samples collected by Envirite pursuant to the implementation of this Order. Envirite shall notify EPA not less than fourteen (14) days in advance of any scheduled sample collection and shall provide notice of all unscheduled collections immediately after Envirite becomes aware that an unanticipated, unscheduled collection has become necessary.

XII. SITE ACCESS

1. EPA and/or any EPA authorized representative shall have the authority to enter and freely move about all property at the Facility at all reasonable times (reasonable times shall include all normal working hours, daylight hours, and hours agreed upon in advance upon advance notice to the Project Coordinator from the Project Manager) for the purposes of, inter alia: oversight and review of any activity engaged in specific to this Order, including but not limited to interviewing site personnel and contractors; inspecting records, operating logs, and contracts related to the Facility; conducting such tests as EPA and/or its Project Manager deem necessary using a camera, sound recording, or other documentary type equipment; and verifying the reports and data submitted by Envirite to EPA. Envirite shall permit such persons to inspect and copy all records, files, photographs, documents, and other writings, including all sampling and monitoring data, in any way pertaining to work undertaken pursuant to this Order.

2. To the extent that the work required under this Order requires access to or use of property presently owned or under the control of persons other than Envirite, Envirite shall exert its full efforts to obtain whatever access agreements, easements, rights-of-way, or other rights of entry that are necessary to carry out the terms of this Order, including but not limited to the offering of fair cash value to obtain such access. For the purposes of the preceding sentence, "fair cash value" shall mean a cash payment in an amount reasonably commensurate with the extent and duration of the resulting interference, if any, with the current use of the property to which access is sought. To the extent possible, Envirite shall exert its full efforts to assure that such access agreements provide for reasonable access by EPA and/or any authorized EPA representative to the property for the purpose of observing Respondent's activities undertaken pursuant to this Order.

3. In the event that Envirite is unable to obtain an access agreement or other right of entry required by this Order, it shall, as soon as possible, notify EPA of this fact.

4. In the event that the situation as set forth in paragraph 3 above occurs, EPA shall either bring action to obtain access or waive performance by Envirite of the obligations under this Order for which access or right of entry was necessary.

5. Nothing in this Order shall be construed to limit EPA's authority to exercise its rights pursuant to Section 3007 of RCRA, or to affect any right of entry possessed by EPA pursuant to any applicable laws, regulations, or permits.

XIII. RETENTION AND AVAILABILITY OF INFORMATION

1. Envirite shall preserve at the Facility all records necessary to evaluate all activities engaged in, and in compliance with the terms of this Order, including copies of all documents or information maintained in any form by it or by its contractors, subcontractors, or anyone else acting on its behalf in connection with activities undertaken pursuant to this Order, until authorized by EPA to do otherwise. At a minimum, these records shall be preserved for as long as any necessary corrective action measures are undertaken or remain ongoing. In the event that records are maintained for Envirite by any other person, contractor, or entity that terminates its activities on Envirite's behalf prior to completion of any necessary corrective action measures, Envirite shall transfer such records to its Facility. The records referred to in this paragraph include, but are not limited to sampling, analyses, chain-of-custody records, manifests, trucking logs, receipts, reports, correspondences, and other documents produced pursuant to or in furtherance of this Order.

2. Envirite shall notify EPA not less than thirty (30) days prior to the destruction of any documents referred to in Paragraph 1 above. Upon request by EPA, Respondent shall provide EPA with the records.

3. Upon request by EPA, Envirite shall promptly make available all records and information relating to the required activities. Envirite may assert a confidentiality claim, if appropriate, covering all or part of any information submitted to EPA pursuant to this Order. Such an assertion shall be made pursuant to 40 C.F.R. § 2.203(b) and shall be adequately substantiated when made. Analytical data shall not be claimed as confidential by Envirite. Information determined to be confidential by EPA shall be afforded the protection specified at 40 C.F.R. Part 2, Subpart B. If no

such claim accompanies any information submitted to EPA, such information may be made available to the public without further notice to Envirite. Envirite shall not assert a confidentiality claim regarding any hydrogeological or chemical data generated pursuant to this Order.

XIV. STIPULATED PENALTIES

1. Envirite shall take all measures necessary to perform its obligations under this Order. Unless there has been a written modification of a Milestone Event compliance date, or excusable delay, as defined in Article XX, if Envirite fails to meet a compliance date for a Milestone Event pursuant to this order, Envirite shall pay upon demand stipulated penalties as set forth below. Invocation of Dispute Resolution shall not provide a basis for excusable delay. "Milestone Event" shall mean the submittal of the following deliverables completed in compliance with the requirements of Attachment IV and Article VIII of this Order and all requirements incorporated by reference therein from the Attachments to this Order: the RFI Proposal, the Phase I RFI Interim Report, the Phase II RFI Proposal, the RFI Report, the MPS Proposal; the CMS Proposal; and the CMS Report. The "compliance date" shall mean: for the RFI Proposal, the date for submittal established by the Schedule in Attachment IV; for all other reports and proposals, the date established in the schedule approved by the Director in accordance with Article VIII or IX.

2. Respondent shall also pay stipulated penalties as set forth below for any failure to complete an Interim Measure in accordance with the requirements for such measure identified, proposed and approved pursuant to Attachment IV of this Order. The compliance date for an Interim Measure shall be the date for completion established by the schedule approved by EPA in accordance with Article VIII or IX.

3. The following stipulated penalties shall be payable for failure to meet a Milestone Event compliance date or failure to complete an Interim Measure:

   - **$5,000** for a period of non-compliance of 7 days or less;
   - **$10,000** for a period of non-compliance greater than 7 days but less than 14 days;
   - **$25,000** for a period of non-compliance of 14 days or greater, plus $5000 for each day of non-compliance beyond the 14th day.

4. All stipulated penalties shall be payable to the United States within thirty (30) days after written demand by EPA. Payments owed to EPA under this Paragraph shall be paid by cashier's or certified check, payable to the Treasurer, United States of America. Envirite shall note on this check the docket number of this Order. The check shall be sent to:

EPA - Region I
P.O. Box 36019M
Pittsburgh, PA 15251

At the time of payment, Envirite shall send a notice of such payment to the Regional Hearing Clerk at:

U.S. Environmental Protection Agency
JFK Federal Building, Room 2203
Boston, MA 02203
ATTN: Regional Hearing Clerk

5. The stipulated penalties set forth in this Article do not preclude EPA from pursuing any other remedies or sanctions which may be available to EPA by reason of Envirite's failure to comply with any of the requirements of this Order, nor shall payment of said penalties relieve Envirite of the responsibility to comply with the requirements of this Order.

6. Issuance and receipt of a notice of noncompliance is not a condition precedent to the accrual of stipulated penalties. All penalties begin to accrue consistent with the provisions set forth in Article IX, paragraph 5.

7. Stipulated penalties shall not accrue during any time period extended by EPA in accordance with the provisions of Article IX, paragraph 3.

8. Stipulated penalties shall not accrue during the period of time between the meeting of the parties conducted after notification by Envirite of the invocation of Dispute Resolution, in accordance with the provisions of Article IX, paragraph 1, and such date as EPA issues its written determination concerning the issue(s) for which Dispute Resolution was invoked.

9. If Envirite disputes the basis for imposition of stipulated penalties, the issue shall be resolved under the Dispute Resolution provisions of this Order.

10. Neither the filing of a petition to resolve a dispute nor the payment of penalties shall alter in any way Envirite's obligation to comply with the requirements of the Order.

11. No payments made under this section shall be tax deductible.

XV. RESERVATION OF RIGHTS AND NON-RELEASE OF OTHER CLAIMS

1. Nothing contained in this Order shall be construed to prevent EPA from seeking legal or equitable relief to enforce the terms of this Order or from taking other actions it deems necessary or appropriate to protect human health or the environment. These actions include, but are not limited to, seeking further enforcement in Federal District Court pursuant to Section 3008(h)(2) of RCRA if Respondent fails to comply with the requirements of this Order within the times specified.

2. EPA reserves the right to expend and recover funds under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); to bring "imminent and substantial endangerment" actions under RCRA Section 7003 and/or CERCLA Section 106; to require compliance with RCRA requirements under Section 3008(a); to address releases other than those identified in this Order; to require further study or action under Section 3008(h) of RCRA as necessary to respond to any releases from the Facility, including those addressed in this Order; and to bring actions as appropriate under any of the other authorities administered by EPA. EPA also reserves the right to bring actions against non-parties as appropriate.

3. If EPA finds it necessary to take action at the Facility, EPA reserves the right to perform any portion of the work consented to herein or any additional site characterization, corrective measure study, and/or any response/corrective actions, as it deems necessary to protect human health or the environment. EPA reserves the right to seek reimbursement from Envirite for such additional costs incurred by EPA. Notwithstanding compliance with the terms of this Order, Envirite is not released from liability, if any, for the cost of such actions taken by EPA.

4. Nothing in this Order shall constitute or be construed as a release by Envirite or by EPA of any claim, cause of action or demand in law or equity against any person, firm, partnership, or corporation not a signatory to this Order for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous constituents, hazardous substances, hazardous wastes, pollutants, or contaminants found at, taken to, or taken from the Facility.

5. Except as otherwise provided in this Order, Envirite does not admit any violations of or liability under any federal, state, local, or common law, or any other liability of any kind; Respondent does not admit the existence of any actual or potential danger, hazard, or harm to any person, property, political entity, or agency, the environment, or the public health or welfare. Envirite agrees that this Order shall be admissible as evidence in any proceeding brought by EPA to enforce this Order, but both parties agree that this Order, including all attachments, shall not constitute or be construed as an admission or as evidence of an admission on the part of Envirite, in whole or in part, in any other administrative or judicial proceeding.

XVI. OTHER APPLICABLE LAWS

All actions required to be taken pursuant to this Order shall be undertaken in accordance with the requirements of all applicable local, state and federal laws and regulations. Envirite shall obtain or cause its representative to obtain all permits and approvals necessary under such laws and regulations.

XVII. FINANCIAL ASSURANCE

1. Envirite, within thirty (30) days after the effective date of this Order, shall provide EPA with financial assurance of its ability to carry out the requirements of this Order by meeting one or more of the financial requirements allowable under 40 C.F.R. § 265.143. If Envirite fails to perform any of the terms or conditions of this Order, the financial assurance shall be available to EPA to perform such terms or conditions of this Order provided that, prior to drawing upon any financial assurance instrument, EPA shall notify Envirite in writing of the alleged failure to perform and provide Envirite with a reasonable period in which to remedy the alleged non-performance.

2. Each year, on the anniversary date of the provision of financial assurance, Envirite shall provide EPA with a showing that it can provide financial assurance for any activities under this Consent Order that remain uncompleted.

XVIII. SUBSEQUENT MODIFICATION

1. This Order, including its attachments, may be amended by agreement of the parties. Such amendments shall be in writing and shall be effective as of the date a written copy of such amendment, signed by EPA, is received by Envirite.

2. EPA may, entirely within its discretion, extend deadlines under this Order whenever it deems such extensions appropriate.

3. No informal advice, guidance, suggestions, or comments by EPA regarding reports, plans, specifications, schedules or any other writing submitted to Envirite will be construed as relieving Envirite of its obligation to obtain written approval, if and when required by this Order.

XIX. SEVERABILITY

If any provision/authority of this Order, or the application of this Order to any party or circumstances is held to be invalid by any judicial or administrative authority, the application of such provisions to other parties or circumstances and the remainder of the Order shall remain in force and shall not be affected thereby.

XX. FORCE MAJEURE

1. Envirite will complete all activities required by this Order within the time limit(s) set forth, approved, or established herein, unless such performance is prevented or delayed by events that constitute a Force Majeure. Force Majeure is defined as an act of God, fire, flood, vandalism, or other circumstances beyond the control of Envirite.

2. Envirite shall notify EPA in writing within fifteen (15) days after it becomes aware, or should have become aware, of any event that it knows or has reason to believe constitutes a Force Majeure. Such notice shall estimate the anticipated length of delay, including necessary demobilization and remobilization, its cause, measures taken to minimize the delay, and an estimated timetable for implementation of these measures. Envirite shall utilize all means to avoid or minimize the delay. Failure to comply with the notice provisions of this section shall be grounds for EPA to deny Envirite an extension of time for performance.

3. Financial, economic, or business conditions, or changes in same, or increased costs or expenses associated with the implementation of actions called for by this Order shall not be considered to be a Force Majeure event.

4. If the parties agree that the delay has been or will be caused by a Force Majeure, the time for performance for that requirement shall be extended for a period of time equal to the delay resulting from the Force Majeure. This will be affected by a written amendment to this Order. If the parties do not agree that a delay has been or will be caused by a Force Majeure or if there is no agreement on the length

of the extension necessitated thereby, the dispute will be resolved in accordance with the Dispute Resolution provisions of this Order.

5. In the event of a dispute as to whether a Force Majeure event has occurred, Envirite will bear the burden of proof to establish the facts necessary to justify an extension of time for compliance. Such demonstration shall include showings that: (a) the event constitutes a Force Majeure, (b) the delay was caused by the Force Majeure, and (c) that the period of additional time needed for performance is warranted under the circumstances.

XXI. PRECLUSION OF CLAIMS AGAINST THE HAZARDOUS SUBSTANCES SUPERFUND

Respondent agrees not to make any claims pursuant to Sections 111 or 112 of the Comprehensive Environmental Response, Compensation and Liability Act, as amended by the Superfund Amendments and Reauthorization Act of 1986 (hereinafter "CERCLA"), 42 U.S.C. §§ 9611 or 9612, or any other provision of law directly or indirectly against the Hazardous Substances Superfund established by CERCLA for costs incurred in complying with this Order. Nothing in this Order shall be deemed to constitute preauthorization of a CERCLA claim within the meaning of 40 C.F.R. 300.25(d).

XXII. INDEMNIFICATION OF THE UNITED STATES GOVERNMENT

Envirite agrees to indemnify and save and hold harmless the United States Government, its agencies, departments, agents, and employees from any and all claims or causes of action arising from or on account of acts or omissions of Envirite or its agents, independent contractors, receivers, trustees, and assigns in carrying out activities required by this Order. This indemnification shall not be construed in any way as affecting or limiting the rights or obligations of Envirite or the United States under their various contracts. Nothing herein shall limit or affect the rights or obligations of Envirite or the United States under the Federal Tort Claims Act.

XXIII. REFERENCE TO ATTACHMENTS

All future changes shall be cross referenced and incorporated into the Attachments contained in this Order.

XXIV. TERMINATION AND SATISFACTION

When EPA determines that Envirite has successfully completed its obligations under this Order, EPA shall provide written

notice to Envirite that it has demonstrated, to the satisfaction of EPA, that all of the terms of this Consent Order, including any additional tasks which Envirite has agreed to undertake, have been completed. EPA shall issue such notice after receipt of notice from Envirite that it has completed the requirements of this Order.

XXV. SURVIVABILITY/PERMIT INTEGRATION

Subsequent to the issuance of this Order, a RCRA permit may be issued to the Facility incorporating the requirements of this Order by reference. The requirements of this Order shall not terminate upon the issuance of a RCRA permit, unless such permit fully incorporates all outstanding obligations under this Order.

XXVI. EFFECTIVE DATE

This Consent Order is effective upon receipt by Envirite of a fully executed copy hereof.

IT IS SO AGREED AND ORDERED:

11/8/90
DATE

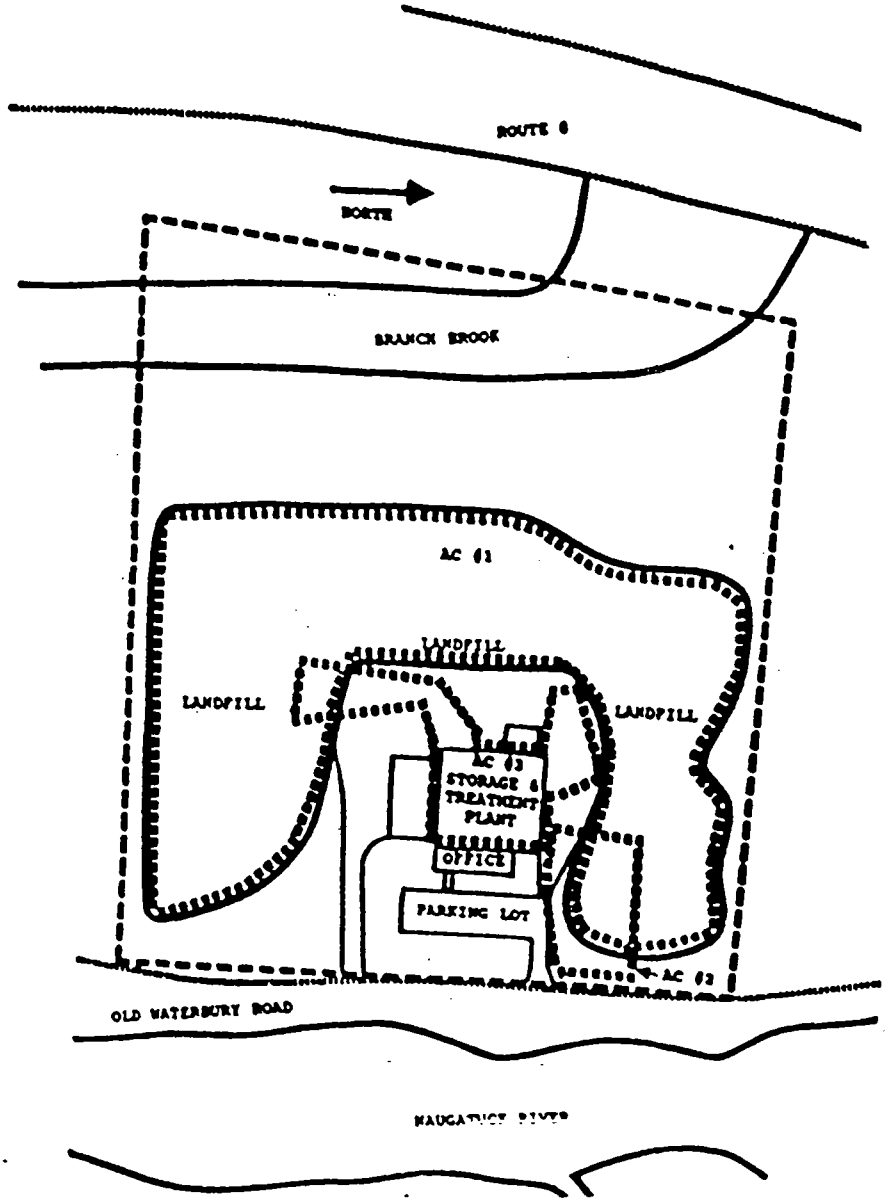
Julie Belaga
Regional Administrator
U.S. Environmental Protection Agency
Region I

10/22/90
DATE

Stephen B. Smith
Envirite Corporation

ATTACHMENT I

LOCATION MAP OF AREAS OF CONCERN



EXPLANATION

PUBLIC ROAD

AREA OF CONCERN

PROPERTY LINE

ENVIRITE CORPORATION
LOCATION MAP
(NOT TO SCALE)

ATTACHMENT II

AREAS OF CONCERN AND MEDIA TO BE ADDRESSED IN THE WORK PLAN

AC	GROUNDWATER	SOIL	SURFACE WATER	SEDIMENT	AIR
1	x	x	x	x	x
2	x	x	x	x	x
3	x	x	x	x	x

ATTACHMENT III

DEFINITIONS

All terms used in this Order are as defined in 40 C.F.R. Sections 260.10 and 264.141, unless defined below:

1. "Act" or "RCRA" means the Resource Conservation and Recovery Act, as amended by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. §§ 6901 et seq.

2. "Appendix IX" means Appendix IX to 40 C.F.R. Part 264 as amended. See 52 Fed. Reg. 25942 (July 9, 1987) (Final Rule).

3. "Area(s) of Concern" (AC) means an area at which hazardous waste or hazardous constituents have been managed or have come to be located and from which releases might occur. Examples of an AC include, but are not limited to: landfills, disposal or spill locations, waste piles, storage tanks, container storage areas, and waste treatment areas.

4. "Background" for any particular medium (groundwater, soil, surface water and sediments, and/or air) means a representative nearby sample of that medium that is upgradient of any zone(s) of contamination and is not affected by a release of hazardous waste or hazardous constituents from the Facility.

5. "Day" means a calendar day unless otherwise stated.

6. "Director" means the Director of the Waste Management Division for the EPA Region I or his designee.

7. "Effective date" means the date upon which this Order will become effective, which is the date upon which Envirite receives a fully executed copy of this Order.

8. "Facility" includes all contiguous land and structures, other appurtenances and improvements on the land, not limited to the areas used in the management of hazardous waste.

9. "Hazardous Constituents" include those constituents listed in Appendix VIII to 40 C.F.R. Part 261 and Appendix IX to 40 C.F.R. Part 264.

10. "Hazardous Waste" shall be used as defined in § 1004(5) of RCRA, 42 U.S.C. § 6903(5).

11. "Health Based Criteria" shall refer to those health based standards that, in order of preference, have been either promulgated by EPA in regulation form, adopted by EPA in guidance form, or deemed acceptable by the Director.

12. "HSWA" means the Hazardous and Solid Waste Amendments of 1984.

13. "Justify" or "Justification" means to support the recommendation or conclusion which is being put forth with scientific principles and/or supporting data, as appropriate.

14. "Monitoring Well" means a well capable of producing groundwater samples that, upon laboratory analysis, can provide a reliable indication of groundwater quality.

15. "Observation Well" means a well used to measure water table elevations.

16. "Person" means an individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, association, State, municipality, commission, political subdivision of a State, or any interstate body.

17. "Piezometer" means a small diameter, non-pumping well used to measure hydraulic head at some depth below the water table.

18. "Point of Exposure" means the point at which it is assumed a potential receptor can come into contact, either now or in the future, with hazardous waste and/or hazardous constituents.

19. "Release" includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.

20. "Surface Water" means water occurring immediately adjacent to land as overland flow, open channel flow, water in lakes, ponds, reservoirs, estuaries, and oceans.

21. "Uppermost Aquifer" means the geological formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer.

22. "Water Quality Standards" are provisions of State or Federal law which consist of a designated use or uses for the waters of the United States and water quality criteria for such waters based upon such uses.

23. "Zone of Contamination" means the three dimensional extent of contamination that was produced or is being produced from a release of hazardous waste or hazardous constituents from areas of concern. This zone includes such areas of concern and their associated contamination.

ATTACHMENT IV

I. RCRA FACILITY INVESTIGATION (RFI) PROPOSAL

Within sixty (60) days after the effective date of this Order, Respondent shall submit to EPA a RCRA Facility Investigation (RFI) Proposal. The RFI Proposal shall detail the methodology for determining the nature, rate, and extent of releases of hazardous waste and/or hazardous constituents from the Areas of Concern (AC) described in Attachment VI, listed in Attachment II, and located in Attachment I, into the groundwater, soils, surface waters and sediments, and air. The specific media that shall be addressed for each AC are set out in Attachment II. The methodology also shall be designed to gather the preliminary information necessary to select and design corrective measures for all releases from the AC listed in Attachment II. At a minimum, and subject to the provisions of Article VIII of the Order, the RFI proposal shall include the following and may include proposals for staging portions of the investigation based on the results of screening tests or existing data.

A. Current Assessment Summary Report

The RFI Proposal shall contain a Current Assessment Summary Report based on all existing past or current data that is available to Respondent. The Current Assessment Summary Report shall include the following minimum information:

1. A history and description of hazardous waste generation and treatment, storage and disposal activities conducted at the Facility. This history shall include, without limitation, the active dates of the AC listed in Attachment II, and an identification of the types and amounts of all materials spilled or deposited therein as well as the sources reviewed or interviewed to determine the information for each AC.

2. An analysis of the climatological, topographic and hydrogeological features of the site including but not limited to:

    a. the annual and monthly precipitation averages for the preceding fifteen years;

    b. the monthly temperature averages and extremes for the preceding fifteen years;

    c. a wind rose for monthly and annual wind direction for the last five years; and

d. a description of any topographic and/or manmade features that may affect air flow or water flow and emission patterns at the Facility.

3. An analysis of the direction and rate of groundwater flow through the site, including a recent groundwater table contour map.

4. A description of the zone of contamination of hazardous waste and/or hazardous constituents released from AC at the Facility. The description shall be based on available monitoring data and qualitative information on locations and contaminant levels. Respondent shall include a description of the sampling methodologies, including quality assurance and quality control (QA/QC) procedures used to generate all quantitative data. Respondent also shall include a conclusion as to whether the releases potentially could have entered the groundwater, soils, surface water and sediments, bedrock and air.

5. A description and evaluation of all actions taken to date to mitigate the effects on human health or the environment of any release(s) from AC at the Facility.

6. A description and evaluation of the current performance of existing piezometers, observation wells and monitoring wells (i.e., design, screen length, well logs, well development, etc.) in use.

7. Historic topographic maps and historic photography of the Facility in Respondent's possession. If the historic maps are not of a scale which clearly depict the information required, Respondent shall use these maps to generate new ones that are of such a scale. The scale shall be clearly stated for all maps, and shall be consistent and appropriate for all newly generated maps. All newly generated maps shall be of sufficient detail and accuracy to locate and report all current and future work performed at the site. Maps shall be included which identify the following:

   a. general geographic location of the Facility;

   b. property lines, with the owners of all adjacent property clearly indicated;

   c. topography, waterways, wetlands, flood plains, water features, drainage patterns, storm drainage system;

   d. tanks, buildings, utilities, paved areas, easements, right-of-ways and wells;

e. all solid or hazardous waste treatment, storage or disposal areas active after November 19, 1980;

f. all known past solid waste treatment, storage or disposal areas regardless of whether they were active after November 19, 1980;

g. surrounding land use (residential, commercial, agricultural, recreational); and

h. existing piezometers, observation wells and monitoring wells.

8. A description of data omissions and/or inadequacies that must be addressed to satisfy the objectives of the RFI Proposal. This shall include all other areas of the property that have not been addressed at this time. (Sampling methodologies that have been dismissed from consideration because of inadequate QA/QC must be included, with an explanation as to why they were inadequate.)

9. The Current Assessment Summary Report will at a minimum incorporate the outline in Appendix IV.

B. **Identification of Additional Areas of Concern**

1. If, pursuant to Section I.A., Respondent identifies any additional AC at the Facility, the RFI Proposal shall include a proposed modification to Attachment II indicating that such AC have been identified and the newly identified AC shall be investigated for each media of concern.

2. If, pursuant to Section I.A., Respondent identifies any additional media of concern for the AC listed in Attachment II and/or additional AC to be included in Attachment II, the RFI proposal shall include a proposed modification to Attachment II indicating that such media of concern have been identified for the specified AC. Upon addition to the relevant attachments, the newly identified media of concern shall be investigated for each specified AC.

3. If the review of facility records, historical site plans, and interview of facility personnel determine other locations as yet unidentified which could be the potential site of a release of hazardous waste and/or constituents, the RFI Proposal shall include a proposed modification to Attachment II indicating that such AC have been identified and the newly identified AC shall be investigated for each media of concern.

4. The description of the additional AC will, at a minimum, include the function, condition, design features, size and/or capacity, age, active dates, current and historical operational procedures, method of closure, present status of the area, and the materials managed in the area. All references regarding the derivation of this information will be identified.

C. **Corrective Measures Screening**

The RFI Proposal shall identify the potential corrective measure technologies that may be used on-site or off-site to contain, treat, remedy and/or dispose of the contamination resulting from the release of hazardous waste and/or hazardous constituents from the AC listed in Attachment II. This Corrective Measures Screening shall summarize all prior investigations and shall identify field data that need to be collected during implementation of the RFI to facilitate the technical evaluation and selection of the interim and final corrective measure or measures.

1. The Corrective Measures Screening shall include a discussion of available technologies that could be used to remediate the contamination resulting from release of hazardous waste and/or hazardous constituents from the AC at the Facility. The discussion shall include a general analysis of the effectiveness of the alternatives. The Corrective Measures Screening shall include the following minimum information:

   a. potential on-site treatment technologies available and the description of how those solutions would be incorporated into known or anticipated site conditions. The alternative treatment section shall include a discussion of the information available or necessary to evaluate the following:

      i. compatibility of waste and construction or treatment materials;

      ii. effectiveness of treatment;

      iii. treatability of wastes; and

      iv. longevity and maintenance considerations of the alternatives.

   b. potential recycling of wastes to recover or separate constituents and minimize the quantity of the waste materials.

c. potential off-site treatment or disposal alternatives.

d. a summary of the measures that will be undertaken in order to obtain the information necessary to evaluate corrective measures.

2. The Corrective Measures Screening shall include an evaluation of the Interim Corrective Measures that may be instituted at the Facility. The evaluation shall be predicated on the procedures and requirements established in the proposed Public Health and Environmental Risk Evaluation, Section I.D.4. below. The Interim Measures evaluation shall include a demonstration of how the Interim Measures will abate releases and threatened releases. The Interim Measures shall be, to the extent possible, consistent and integrable with any long-term solutions. The evaluation of the Interim Corrective Measures shall include the following minimum information:

a. Proposed measures to protect the populations (both human and animal) and environmental systems that have potential exposure to hazardous wastes and/or hazardous constituents that have been released at the Facility, and that can be instituted prior to determination of the final remedy (e.g., fencing, temporary cap or cover, relocations of populations being exposed to contaminated habitats).

b. Proposed measures to mitigate releases that may be occurring at or from the Facility (e.g., mobile systems that can be used to treat water on a temporary basis, diversion of streams or draining of lakes or lagoons, or dust control measures).

c. Proposed measures to upgrade or repair any measures that have been installed in the past and that have been identified in Section I.A.

d. Potential measures to protect unlined former disposal areas from further precipitation and/or infiltration prior to determination of the final remedy (e.g., run-off/run-on control, temporary cap or cover, waste removal, or pumping of groundwater).

D. **Facility Investigation**

The RFI Proposal shall include proposed studies to characterize the environmental setting of the Facility, the sources of the releases, the

parameters to be sampled, and the contamination. The Proposal shall include plans to divide the investigation into phases and to evaluate public health and environmental risk; shall outline data quality assurance and management protocols; and shall include a health and safety plan conforming to the requirements of Section I.D.7.

1. Environmental Setting

The RFI Proposal shall include a proposed study to characterize the environmental setting of the Facility with respect to soils, bedrock, groundwater, surface waters and sediments and air. In the proposed study, Respondent shall document the methodology to be used in obtaining the data necessary to provide the information required in the RFI Report, as detailed in Section III of this attachment. The environmental setting section shall include the following minimum information:

a. Soil/Bedrock Characterization

Respondent shall include a description of the procedures it intends to use to gather data sufficient to characterize the subsurface geology around each AC. This description shall, at a minimum, include the details of the procedures for characterizing subsurface conditions outlined in Appendix I.A.1 and Appendix II.

b. Procedures for Determining Groundwater Hydraulics

Respondent shall include a description of the procedures it intends to use to gather data sufficient to characterize the groundwater hydraulics associated with each AC. The description shall identify the procedures for establishing the rate and direction of groundwater flow in the horizontal and vertical directions and determining the areas of groundwater discharge to surface water and groundwater recharge by surface water. The description shall also identify the procedures for determining variations of groundwater flow rate and direction (i.e., seasonal, temporal, etc.) and the hydraulic properties of each stratum identified in the boring program. At a minimum, the description shall include the information required and outlined in Appendix I.A.2 and Appendix II.

c. Procedures for Evaluating Surface Waters and Sediments

Respondent shall include a description of the procedures it intends to use to gather data sufficient to evaluate the surface waters and sediments at and in the vicinity of the Facility. At a minimum, the description shall identify the procedures to be used in generating the information required in Appendix I.A.3 and Appendix II as follows:

i. a description of the chemistries of the natural surface water and sediments as applicable. This includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients (NH_3, NO_3-/NO_2-), PO4-3, chemical oxygen demand, total organic carbon and specific contaminant concentrations.

d. Procedures for Evaluating Climatic Conditions

Respondent shall include a description of the procedures it intends to use in evaluating climatic conditions that may cause or influence air flow in the vicinity of the Facility. This description shall, at a minimum, demonstrate how Respondent will generate the information required in Appendix I.A.4. and Appendix II, as applicable.

2. Source and Waste Characterization

The RFI Proposal shall include a proposed study to characterize the AC identified in Attachment II, the AC proposed to be added to Attachment II pursuant to Section I.B. above and the wastes placed in these AC. The proposed study shall document the methodology for obtaining data and drawing conclusions in order to provide the information required in the RFI Report, as detailed in Section III below and in accordance with Appendices I and II where applicable. The proposed study shall, at a minimum, include a description of the procedures the Respondent intends to use to determine the hazardous classification (i.e., whether it is a non-hazardous or a listed or characteristic hazardous waste and, if it is a characteristic hazardous waste, what the characteristic is that renders it hazardous), quantity, physical characteristics, migration/dispersal characteristics, toxicity and chemical composition of the waste placed in each AC.

3. Contamination Characterization

The RFI Proposal shall include proposed contamination characterization programs designed to measure the concentration, rate and extent of hazardous waste and/or hazardous constituents released from the AC listed in Attachment II and the AC proposed to be added to Attachment II pursuant to Section I.B. into the groundwater, soils, surface water and sediments, and air, as specified in Attachments II. The proposed contamination characterization programs shall document the methodology to be used in obtaining the data necessary to provide the information required in the RFI Report, as detailed in Section III below. At a minimum, the contamination characteristics proposal shall include the following:

a. A description of the monitoring well network and sampling methodologies Respondent proposes to use to gather data sufficient to characterize the vertical and horizontal nature of all releases of hazardous wastes and/or hazardous constituents from the AC listed or proposed to be listed in Attachment II into groundwater, the concentrations of such hazardous wastes and/or hazardous constituents, and the rate and extent of their migration. This description shall include the information required in Appendices I and II and shall include the following minimum information:

   i. procedures to verify whether or not contamination has occurred;

   ii. provisions demonstrating that any determination utilizing background groundwater quality must be consistent with section IV.A.2.

b. A description of the procedures and sampling methodologies Respondent proposes to use to gather data sufficient to characterize the vertical and horizontal nature of all releases of hazardous waste and/or hazardous constituents from the AC listed or proposed to be listed in Attachment II into the soil, the concentrations of such hazardous wastes and/or hazardous constituents, and the rate and extent of their migration. This description shall include the information required in Appendices I and II and shall include the following minimum information:

i. procedures to verify whether or not contamination has occurred;

ii. provisions demonstrating that any determination utilizing background soil quality must be consistent with section IV.B.2.

c. A description of the procedures and sampling methodologies Respondent proposes to use to gather data sufficient to characterize the vertical and horizontal nature of all releases of hazardous waste and/or hazardous constituents from the AC listed or proposed to be listed in Attachment II into surface waters and sediments, the concentrations of such hazardous wastes and/or hazardous constituents, and the rate and extent of their migration. This description shall include the information required in Appendices I and II and shall include the following minimum information:

i. procedures to verify whether or not contamination has occurred;

ii. provisions demonstrating that any determination utilizing upgradient surface water and sediment quality will be consistent with section IV.C.2.

d. A description of an ambient air monitoring program capable of assessing worst case ambient concentrations of hazardous waste and/or hazardous constituents released from the AC listed or proposed to be listed in Attachment VI into the atmosphere. This description shall include the information required in Appendices I and II as applicable to air and shall include the following minimum information:

i. procedures to verify whether or not contamination has occurred; and

ii. provisions demonstrating that any determination utilizing background air quality must be consistent with section IV.D.2.

4. Proposed Public Health and Environmental Risk Evaluation

The RFI Proposal shall include a proposed Public Health and Environmental Risk Evaluation (PHERE) designed to

identify the human and wildlife populations and environmental systems that may be exposed to hazardous waste and/or hazardous constituents released from the AC listed or proposed to be listed in Attachment II. The proposed PHERE shall document the methodology for obtaining data and drawing conclusions to provide the types of information specified in Appendix III.

5. Data Collection Quality Assurance Plan

The RFI Proposal shall include a proposed plan to document all monitoring procedures (e.g., sampling, field measurements and sample analysis) performed during the investigation to characterize the environmental setting, the contaminant sources, the contaminant migration and the exposure risks. The proposed plan shall also provide that all information, data and resulting decisions will be technically sound, and properly documented. The Data Collection Quality Assurance Plan shall address Appendices I and II and shall include the following minimum information:

a. Data Collection Strategy

i. a description of the intended uses for the data, and the necessary level of precision and accuracy for such uses;

ii. a description of methods and procedures proposed to assess the precision, accuracy and completeness of the measurement data;

iii. a description of the proposed measures to assure that the following data sets can be compared to each other:

aa) RFI data generated by Respondent over a given time period;

bb) RFI data generated by an outside laboratory or consultant versus data generated by Respondent;

cc) data generated by separate consultants or laboratories; and

dd) data generated by an outside consultant or laboratory over a given time period.

b. Sampling

Sampling plans must be capable of yielding representative samples. The proposed programs shall

document the methodology to be used in obtaining the data necessary to provide the information required. The following elements are required, without limitation, of sampling plans:

i. proposed conditions under which sampling shall be conducted, ensuring representative sampling of worst case conditions when concentrations are likely to be greatest;

ii. proposed media to be sampled, including sample location and number of sites; and

iii. measures used to avoid sample contamination.

6. Data Management Plan

The RFI Proposal shall include a proposed Data Management Plan to document and track investigation data and results. This plan shall identify and establish data documentation materials and procedures, project file requirements and project-related progress reporting procedures and documents. The plan shall also propose a format to be used to present the raw data and conclusions of the RFI. At a minimum, the Data Management Plan shall provide that the following data be documented as indicated below:

a. Data Record

The following data shall be presented in a data record and in a computerized data base or on floppy diskettes in IBM compatible ASCII code:

i. unique samples or field measurement codes;

ii. sampling or field measurement locations and sample or measurement types;

iii. sampling or field measurement raw data;

iv. laboratory analysis ID numbers;

v. properties or components measured; and

vi. result of analyses (e.g., concentration and detection limits).

b. Tabular Displays

The following data shall be presented in tabular displays and in a computerized data base or on floppy diskettes in IBM compatible ASCII code:

i. unsorted (raw) data (prior to validation);

ii. results for each constituent in each medium;

iii. data reductions for statistical analyses;

iv. sorting of data by potential stratification factors (e.g., location, soil layer);

v. summary data; and

vi. data from the data record as applicable.

c. Graphical Displays

The following data shall be presented in graphical formats as applicable (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, fence diagrams, etc.):

i. sampling locations and sampling grids;

ii. boundaries of sampling areas and areas where more data are required;

iii. range of concentration for each constituent at each sampling location;

iv. geographical extent of contamination;

v. constituent concentrations, averages and maxima at each sampling location;

vi. changes in concentration in relation to distance from the source, time, depth or other parameters; and

vii. features affecting intramedia transport and which show potential receptors.

7. *Health and Safety Plan*

a. The RFI Proposal shall include a proposed Health and Safety Plan which shall provide the following minimum information:

i. a Facility description including availability of resources such as roads, water supply, electricity and telephone service;

ii. a description of known hazards and an evaluation of the risks associated with each activity proposed as part of the RFI;

iii. a list of key personnel and alternates responsible for site safety, response operations, and protection of public health;

iv. a description of levels of protection to be worn by personnel;

v. a delineation of work areas;

vi. proposed procedures to control site access;

vii. proposed decontamination procedures for personnel and equipment;

viii. proposed site emergency procedures;

ix. provisions for emergency medical care for injuries and toxicological problems and/or explosions; and

x. a description of an environmental surveillance program to measure exposure during field tasks and thresholds for work stoppage.

b. The Health and Safety Plan shall be consistent with:

i. NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985);

ii. EPA Order 1440.1 - Respirator Protection;

iii. EPA Order 1440.3 - Health and Safety Requirements for Employees Engaged in Field Activities;

iv. EPA Standard Operating Safety Guide (1984);

v. OSHA regulations, particularly in 29 C.F.R. §§ 1910 and 1926;

vi. The contingency plan maintained pursuant to 40 CFR §265.51;

vii. State and local regulations;

viii. Manual for Hazardous Waste Site Activities (1985); and

ix. Other EPA guidance as applicable.

E. **Project Management Plan**

The RFI Proposal shall include a project management plan establishing a proposed schedule for completion of the specified elements of the work required under this Order. The proposed schedule shall specify that implementation of the Proposal shall begin immediately upon EPA approval. The project management plan shall also require the submittal of monthly reports and the submittal of an interim report(s) at the completion of the first phase of the study. Respondent shall submit a justification for the proposed schedule and shall establish that the proposed schedule is as expeditious as possible.

The project management plan shall provide the following minimum information to implement the proposal:

1. Phase I tasks shall include the following types of field work: surveying and gridding of all relevant areas; geophysical surveys of all relevant areas; sufficient number of sampling events to effectively characterize the nature and extent of contamination at all AC for all media of concern listed in Attachment II; test borings/pits sufficient to define subsurface geologic and hydrogeologic units; identification of additional AC and media of concern satisfying Section I.B. above; preliminary investigation of corrective measures satisfying Section I.C. above; and identification of proposed indicator chemicals (see Appendix III.A.2.). The project management plan shall propose a schedule for each of these tasks and shall provide that all Phase 1 tasks shall be completed by a specified date, not to exceed eight (8) months after EPA's written approval of the RFI Proposal. The Phase 1 tasks shall be considered to be complete at the completion of the final field task included therein.

2. Beginning with the month following the approval of the RFI Proposal and throughout all the phases of the RFI, Respondent shall provide EPA with written progress reports for each month, by the tenth day of the following month. At a minimum these progress reports shall include:

a. A description of all tasks completed during the previous month (e.g., sampling activities and dates thereof, number of samples taken, and dates that samples are sent in for analysis);

b. A description of all required tasks not completed during the previous month, an explanation as to why the tasks were not completed, and an explanation as to how and when they will subsequently be completed;

c. All results of sampling, tests and other data generated or received by Respondent during the previous month and an interpretation of those results;

d. A description of any problem areas and anticipated problem areas that may arise in complying with the order, and how Respondent proposes to overcome these problems; and

e. A projection of tasks (sampling, etc.) for the next two months, with proposed schedules if different than approved.

3. Within thirty (30) days of completion of the Phase I Tasks, Respondent shall submit to EPA the Phase I Interim Report and Phase II Proposal as required in Section II below. The Plan shall provide for submission of a schedule for completion of Phase II of the Facility Investigation and implementation of an approved schedule for Phase II.

4. Phase II tasks shall include the following field work: detailed air monitoring; additional geophysical surveys as necessary; installation of additional monitoring wells as necessary; at least two sampling events of all media included in Attachment II; other sampling as proposed in the Phase II proposal; and a final survey of the Facility incorporating all changes made pursuant to this Order. Phase II tasks shall also include, without limitation, the analyses necessary for the proposal of media protection standards for all hazardous waste and/or hazardous constituents released from the AC listed in Attachment II, as required in Section IV of this attachment.

5. The Plan shall provide that within sixty (60) days after the completion of the final Phase 2 field task,

Respondent shall submit to EPA the RFI Report, as required in Section III below. By the same date, Respondent shall also submit to EPA its Media Protection Standards Proposal (MPS), as required in Section IV below.

6. The Plan shall provide for a proposed schedule for the identification of the corrective measures Respondent proposes to study to achieve the media protection standards, and the justification therefor, as required in Section VI below. This Corrective Measures Study (CMS) proposal shall be completed within thirty (30) days after Respondent receives written notice from EPA which sets the media protection standards in accordance with Section V below.

7. The Plan shall provide a proposed schedule for the preparation and submittal of a CMS Report, as required in Section VII below. This shall be completed within ninety (90) days after Respondent receives the approved CMS Proposal pursuant to Article VIII of the Order.

II. PHASE I INTERIM REPORT AND PHASE II PROPOSAL

Within thirty (30) days of the completion of the Phase I tasks, Respondent shall submit to EPA the Phase I Interim Report and Phase II Proposal. This document shall include the following:

1. A summary of the results of Phase I;

2. A proposal as to whether any additional work, besides that set out in Section I.E.4. above, should be included in Phase II;

3. A proposed schedule for each of the Phase II tasks, including those established pursuant to Sections I.E.4. and II.2. above. In no event shall this schedule allow more than eight (8) months from EPA's approval for the completion of the Phase II tasks. The Phase II tasks shall be considered to be completed at the completion of the final field task included therein;

4. A statement as to whether any additional AC have been identified since the submittal of the RFI Phase II Proposal. If so, the Phase I Interim Report and Phase II Proposal shall be modified to include additions to Attachment II as appropriate, indicating that one or more AC have been identified and that they shall be investigated for the specified media of concern. Additionally, the Phase I Interim Report and Phase II Proposal shall contain a proposed schedule showing how investigation of the newly identified AC shall be

integrated into the ongoing investigation. Respondent shall have the burden of justifying that the proposed schedule is as expeditious as practicable. If Respondent concludes that the newly identified AC cannot be investigated within the time frame established for Phase II pursuant to Article VIII. of the Order, Respondent shall submit a recommendation as to whether the newly proposed investigations are so central to the RFI that more time should be allotted for Phase II or, alternatively, as to whether such investigations should proceed on a separate track without delaying implementation of the subsequent steps in the corrective action process;

5. A statement as to whether any additional media of concern have been identified for the AC listed in Attachment II since the submittal of the RFI Proposal. If so, the Phase I Interim Report and Phase II Proposal shall also include a proposed modification to Attachments II, as appropriate, indicating that additional media of concern have been identified and that they shall be investigated for the specified AC. Additionally, the Phase I Interim Report and Phase II Proposal shall contain a proposed schedule showing how investigation of the newly identified media of concern shall be integrated into the ongoing investigation. Respondent shall have the burden of justifying that the proposed schedule is as expeditious as possible. If Respondent concludes that the newly identified media of concern cannot be investigated within the time frame established for Phase II pursuant to Article VIII of the Order, Respondent shall submit a recommendation as to whether the newly proposed investigations are so central to the RFI that more time should be allotted for Phase II or, alternatively, as to whether such investigations should proceed on a separate track without delaying implementation of the subsequent steps in the corrective action process; and

6. A proposal as to whether any of the releases identified in Attachment II, or any of the AC or media identified pursuant to Sections II.4. or 5. above, pose an immediate threat to human health and/or the environment such that interim measures shall be instituted. If any interim measures are deemed to be necessary, Respondent shall propose specific interim measures, together with appropriate protocol and schedules. If the proposed time frame for the interim measures exceeds the time frame for Phase II established pursuant to Article VIII. of the Order, Respondent shall propose the submission of an Interim Measures Report that complies with the requirements of Section VIII below, within thirty (30) days after the completion of the final

field task of the interim measure(s) in question. In such event, the proposal shall also allow for review and possible modification by the Director as provided under analogous sections of this Order (see, e.g., Article VIII of this Order).

III. RFI REPORT

Within sixty (60) days after the completion of the final Phase II field task, Respondent shall submit to EPA an RFI Report which shall provide the following minimum information:

A. Environmental Setting

1. Hydrogeology

The RFI Report shall evaluate the hydrogeologic conditions at the Facility. At a minimum, the RFI Report shall include:

a. A description of the regional and Facility-specific geologic and hydrogeologic characteristics affecting groundwater flow beneath the Facility, including without limitation:

i. regional and Facility-specific stratigraphy (soil and unconsolidated sediment cover, bedrock, strike and dip, and formation origins), illustrated by geologic maps and cross sections with supporting geophysical data and boring logs;

ii. a description of regional and local structural features (e.g., folding, faulting, tilting, jointing, etc.), including all supporting data;

iii. depositional history of unconsolidated and consolidated units;

iv. regional and Facility-specific hydrogeologic flow patterns, including an analysis of the interrelationship between the bedrock and surficial aquifers;

v. an analysis of the potential influence(s) of geologic, topographic, and geomorphic features on the groundwater flow system; and

vi. identification and characterization of areas and amounts of groundwater recharge and discharge.

b. A classification and description of the hydrogeologic properties of the Facility specific geologic units including units in Section III.A.1.a.i., above, and including:

i. hydraulic conductivity and porosity (total and effective), collected at ten foot intervals or as changes in stratigraphy occur;

ii. lithology, grain size distribution, texture, and uniformity; and

iii. an interpretation of hydraulic interconnections between saturated zones and consolidated and unconsolidated geologic units.

c. A description of groundwater quality and flow beneath the Facility, based upon a review of existing data and the results of soil borings, geophysical investigations, and groundwater monitoring. At a minimum, this description shall include the following:

i. water levels during high and low flow season;

ii. vertical and horizontal flow components during high and low flow seasons, noting any changes in the hydraulic gradients; and

iii. water level contour maps, vertical gradient sections, and well or piezometer hydrographs shall be submitted as documentation of the above.

d. A description of manmade influences that may affect the hydrogeology of the site, identifying:

i. local water supply and production wells, with approximate schedules of pumping;

ii. hydraulic structures (pipelines, french drains, ditches); and

iii. groundwater mounding resulting from the AC listed in Attachment II.

2. Soils

The RFI Report shall include an evaluation of all surface and subsurface soils in the vicinity of the AC

listed in Attachment II. Those features and properties of the soils that may cause or influence the migration, transformation, or attenuation of contaminants shall be characterized. The RFI Report also shall include an areal distribution and a cross-sectional profile of the soils. At a minimum, the Report shall include the following for each stratigraphic unit identified:

a. Soil Conservation Service soil classification;

b. Surface soil distribution;

c. Soil profile;

d. Hydraulic conductivity (saturated and unsaturated);

e. Bulk density;

f. Particle size distribution;

g. Depth of water table;

h. Soil pH;

i. Infiltration;

j. Storage capacity; and

k. Vertical flow rate.

3. Surface Water and Sediments

The RFI Report shall include an evaluation of the surface waters and sediments in the vicinity of the Facility. At a minimum, Respondent shall provide the following information:

a. A description of the temporal and permanent surface-water bodies including:

   i. for impoundments: location, elevation, surface area, depth, volume, freeboard and purpose of impoundment;

   ii. for streams, ditches and channels: location elevation, flow rates, depth, width, seasonal fluctuation, flood potential (i.e., 100 year storm event), and state stream classification (for streams only); and

   iii. drainage patterns.

placed, collected or removed including a description and map(s) of the AC listed in Attachment II. At a minimum, Respondent shall provide the following information:

1. Characteristics of Any AC

   a. Location of AC;

   b. Type of area;

   c. Design features;

   d. Operating practices (past and present as applicable);

   e. Period of operation;

   f. Age of AC;

   g. General physical condition;

   h. Method used to close the AC; and

   i. Information source(s) for the above AC characteristics.

2. Waste Characteristics

   a. Type of waste placed in the AC:

      i. hazardous classification (i.e., whether it is a non-hazardous or a listed or characteristic hazardous waste and, if it is a characteristic hazardous waste, what the characteristic is that renders it hazardous); include EPA waste classification number if known;

      ii. quantity;

      iii. chemical composition; and

      iv. toxicity.

   b. Physical and chemical characteristics of identified non-hazardous wastes, hazardous wastes, and hazardous constituents (pure component values) including:

      i. physical form (solid, liquid, gas);

      ii. physical description (e.g., powder, oily sludge);

iii. pH;

iv. general chemical class (e.g., acid, base, solvent);

v. molecular weight;

vi. density;

vii. boiling point;

viii. viscosity;

ix. solubility in water;

x. cohesiveness of the waste; and

xi. vapor pressure.

c. Migration and dispersal characteristics of the waste and waste constituents including:

i. sorption;

ii. biodegradability, bioaccumulation, biotransformation;

iii. photodegradation rates;

iv. hydrolysis rates;

v. volatilization rates; and

vi. chemical transformations.

C. **Contamination Characterization**

The RFI Report shall include documentation of the rate, concentration and extent of releases of hazardous waste and/or hazardous constituents from the AC listed in Attachment II into the groundwater, soils, surface water and sediments and air. The RFI Report may characterize contamination individually for each AC, by area affected, or at the Facility as a whole, so long as the RFI Report includes a characterization of the media contaminated at each AC as specified in Attachment II. At a minimum, Respondent shall provide the following information:

1. Groundwater Contamination

In the RFI Report, Respondent shall characterize all groundwater contamination resulting from releases from

the AC listed in Attachment II. At a minimum, Respondent shall provide the following information:

a. A description of the horizontal and vertical extent of any immiscible or dissolved contaminants in the groundwater originating from the Facility;

b. The horizontal and vertical directions of contaminant movement;

c. The velocity of contaminant movement;

d. The horizontal and vertical concentration profiles of Appendix IX constituents in the groundwater;

e. An evaluation of factors influencing the contaminant movement, including the combined effect of all constituents detected; and

f. An extrapolation of future contaminant movement, including a discussion of degradation, attenuation, and diffusion.

2. Soil Contamination

In the RFI Report, Respondent shall characterize the contamination of the surface and subsurface soils in the vicinity of any contaminant releases from the AC identified in Attachment II. At a minimum, Respondent shall provide the following information:

a. A description of the vertical and horizontal extent of contamination;

b. A description of contaminant and soil chemical properties within the saturated and unsaturated contaminated area(s). At a minimum, the described properties shall include contaminant solubility, speciation, adsorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation, and any other factors that might affect contaminant migration and transformation;

c. Specific contaminant concentrations;

d. The velocity and direction of contaminant movement; and

e. An extrapolation of future contaminant movement.

3. Surface Water and Sediment Contamination

In the RFI Report, Respondent shall characterize the contamination in surface water bodies and sediments resulting from releases from the AC listed in Attachment II. At a minimum, Respondent shall provide the following information:

a. A description of the horizontal and vertical extent of any immiscible and/or dissolved contaminants in surface water and sediments originating from the Facility, and the extent of contamination in underlying sediments;

b. A description of the horizontal and vertical direction of contaminant movement;

c. The velocity of the contaminant plume (if any);

d. An evaluation of the physical, biological and chemical factors influencing contaminant movement;

e. An extrapolation of future contaminant movement; and

f. A description of the chemistries of the natural surface water and sediments. This includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients (NH_3, NO3-/NO2-), PO_4^{-3}, chemical oxygen demand, total organic carbon and specific contaminant concentrations, as applicable.

4. Air Contamination

In the RFI Report, Respondent shall assess maximum ambient concentrations of air contaminants at the Facility resulting from releases from the AC listed in Attachment II. At a minimum, Respondent shall provide the following information:

a. A discussion of any deviation(s) from the approved sampling and analysis plan;

b. Results of air monitoring at each of the AC listed in Attachment II, including:

i. chemical composition of air contaminants;

ii. rate and density of air contaminants; and

iii. distribution and concentration of the emitted air contaminants.

D. **Public Health and Environmental Risk Evaluation**

In the RFI Report, Respondent shall identify the human and wildlife populations and environmental systems that are susceptible to contaminant exposure from the Facility. Respondent shall also address potential impacts on these receptors from actual exposure, or potential exposure, originating from the AC identified in Attachment II. The Respondent shall provide the information required in Appendix III and shall provide the following minimum information:

1. An evaluation of exposure pathways, which shall include consideration of the following:

   a. Chemical release sources and release media;

   b. Local current uses and possible future uses of groundwater, including:

      i. type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/nonpotable, and industrial);

      ii. location of groundwater users including wells and groundwater discharge areas; and

      iii. aquifer classification within 2,000 feet of the Facility boundary.

   c. Local current and potential future uses of surface waters, including connecting surface waters and surface waters affected by overland flow draining the Facility, including:

      i. domestic and municipal uses (e.g., potable and lawn/gardening watering);

      ii. recreational uses (e.g., swimming, fishing);

      iii. agricultural uses (e.g., crops, farm animals);

      iv. industrial uses;

      v. environmental uses (e.g., fish and wildlife propagation); and

      vi. Connecticut stream classification.

d. Human use of or access to the Facility and adjacent lands, including but not limited to:

i. recreational uses (including hunting, fishing, swimming, etc.);

ii. residential uses; and

iii. commercial uses.

e. The relationship between population locations and the prevailing wind direction;

f. A description of the biota in surface water bodies on, adjacent to, and/or affected by the Facility;

g. The presence of sensitive human and environmental populations, including without limitation the following:

i. Branch Brook, Naugatuck River and the Blue Trail (public hike trail along the banks of the Branch Brook that is located west of and adjacent to AC #1);

ii. a description of any endangered or threatened species in the vicinity of the Facility; and

h. The integration of release sources, environment transport media, exposure points and exposure routes into exposure pathways.

2. Estimations of exposure point concentrations of those indicator chemicals included in the approved Phase I Interim Report and Phase II Proposal, which shall include consideration of at least the following:

a. Quantity of chemical releases; and

b. Predictions as to environmental fate and transport of all releases and including information in Section III.D.1. above.

3. Comparisons of estimated exposure point concentrations of the indicator chemicals included in the approved Phase I Interim Report and Phase II Proposal to the following requirements, standards, and criteria, as specified in the approved RFI Proposal:

a. Maximum Contaminant Levels;

b. Connecticut Water Quality standards;

c. National Water Quality Criteria;

d. Drinking Water Health Advisories;

e. National Academy of Sciences Advisories;

f. World Health Organization Advisories;

g. Connecticut Air Quality Standards;

h. National Ambient Air Quality Standards; and

i. Any other relevant criteria (e.g., those based on research literature).

4. For the indicator chemicals included in the approved Phase I Interim Report and Phase II Proposal for which no requirements, standards, or criteria exist, the PHERE shall include the following:

a. Determinations as to the chemical intake of the contaminant(s) in groundwater, soil, surface waters and sediments, and air, and an integration of the oral, dermal, and inhalation intakes from all media;

b. Assessments of the toxicity of the contaminant(s) with regard to chronic, subchronic, acute, and carcinogenic effects;

c. Characterizations of the chronic, subchronic, acute, and carcinogenic effects of the contaminants, identifying the uncertainties inherent in the proposed methodology; and

d. A risk integration in accordance with the approved RFI Proposal.

E. **Interim Measures Report**

If any interim measures were required under the approved Phase I Interim Report and Phase II Proposal, the RFI Report shall include an Interim Measures Report demonstrating whether these measures have been implemented according to the schedules contained therein and shall include a discussion on the progress of the Interim Measures since time of implementation.

F. **Identification of Additional Tasks**

1. The RFI Report shall include a statement as to whether any additional AC have been identified since the

submittal of the Phase I Interim Report and Proposal. If so, a proposed modification to Attachment II shall be submitted to EPA, indicating that these AC shall be investigated for the appropriate media of concern. If additional AC have been identified, the RFI Report shall include a proposed scope of investigation, together with appropriate protocol and schedules. Additionally, if further investigation is to be conducted, Respondent shall propose the submission of a supplemental RFI Report within thirty (30) days after the completion of the final field task of the investigation. This supplemental Report shall follow the general outline of Section III of this Order. In such event, the proposal shall also provide for review and possible modification of the supplemental Report by the Director as provided under analogous sections of this Order (see, e.g., Article VIII of the Order).

2. The RFI Report shall include a statement as to whether any additional media of concern have been identified for the AC listed in Attachment II since the submittal of the Phase I Interim Report and Proposal. If so, a proposed modification to Attachment II shall be submitted to EPA, indicating that these media shall be investigated for the appropriate AC. If additional media of concern have been identified, the RFI Report shall include a proposed scope of investigation, together with appropriate protocol and schedules. Additionally, if further investigation is to be conducted, Respondent shall propose the submission of a supplemental RFI Report within thirty (30) days after the completion of the final field task of the investigation. This supplemental Report shall follow the general outline of Section III of this Order. In such event, the proposal shall also provide for review and possible modification of the supplemental Report by the Director as provided under analogous sections of this Order (see, e.g., Article VIII of the Order).

3. The RFI Report shall include a proposal as to whether, based on current information, any of the releases identified in Attachment II, or any of the releases identified pursuant to Sections III.F.1. or 2. above, merit immediate attention through the implementation of interim measures. If any interim measures are deemed to be necessary, Respondent shall propose specific interim measures, together with appropriate protocol and schedules. In such event, Respondent shall also propose the submission of an Interim Measures Report within thirty (30) days after the completion of the final field task of the interim measure(s) in question. The proposal shall also allow for review and possible modification of the report by the Director as provided

under analogous sections of this Order (see, e.g., Article VIII of the Order).

IV. MEDIA PROTECTION STANDARDS (MPS) PROPOSAL

On the same date that Respondent submits the RFI Report pursuant to Section III of this Order, Respondent shall submit to EPA a proposed Media Protection Standard (MPS) for each of the indicator chemicals in the approved RFI proposal and/or for other hazardous waste and/or hazardous constituent released from any of the AC listed in Attachment II. These protection standards shall be used for measuring the necessity for and/or the degree of protection afforded by the corrective measures contemplated under Sections VI through VII below. Respondent shall propose a MPS for releases into each media found in the course of the RFI to require a proposed MPS (e.g., groundwater, soils, surface water and sediments, and air). For each proposed standard, Respondent shall include data justifying and supporting the limits specified and locations at which the limits shall be met. Respondent shall have the obligation to show that the proposed MPS comply with the following media specific parameters.

A. Groundwater Protection Standards

1. Respondent shall propose protection standards for each indicator chemical and/or hazardous waste and/or hazardous constituent released into the groundwater from each AC listed in Attachment II. Respondent shall use one or more of the following methods to set these standards:

   a. The proposed groundwater protection standard for any hazardous waste and/or hazardous constituent shall not exceed the background level for such hazardous waste or constituent in the groundwater at the time Respondent submits its proposal; or

   b. For any hazardous constituent listed below, the proposed groundwater protection standard may not exceed those limits specified in this subparagraph;

Contaminant	Maximum Concentration (mg/l)
Arsenic	0.05
Barium	1.0
Benzene	0.005

Cadmium	0.01
Carbon Tetrachloride	0.005
Chromium	0.05
1,4-Dichlorobenzene	0.075
1,2-Dichloroethane	0.005
1,2-Dichloroethylene	0.007
Fluoride	4.0
Lead	0.05
Mercury	0.002
Nitrate	10.0
Selenium	0.01
Silver	0.05
1,1,1-Trichloroethane	0.2
Trichloroethylene	0.005
2,4,5-Trichlorophenoxy Acetic Acid	0.01
Vinyl Chloride	0.002
Endrin (1,2,3,4,10,10-hexachloro-1,7 epoxy-1,4,4a,5,6,7,8,9a-octahydro-1, 4-endo, endo-5,8-dimethano naphthalene)	0.0002
Lindane (1,2,3,4,5,6-hexachlorocyclohexane, gamma isomer)	0.004
Methoxychlor (1,1,1-Trichloro-2,2-bis (p-methoxyphenylethane)	0.1
Toxaphene (C_{10}, H_{10}, C_{16}, Technical chlorinated camphene, 67-69 percent chlorine)	0.005
2,4-D (2,4-Dichlorophenoxyacetic acid)	0.1
2,4,5-TP Silvex (2,4,5-Trichlorophenoxy-propionic acid)	0.01

or;

c. Respondent may propose an Alternate Concentration Limit (ACL) for each hazardous waste and/or hazardous constituent released or being released into the groundwater from the AC listed in Attachment II. If Respondent chooses to propose a groundwater ACL, Respondent shall have the burden of establishing that the proposed ACL will not pose a substantial present or potential hazard to human health or the environment as long as the ACL is not exceeded; or

d. The proposed groundwater protection standard may be a combination of any of the methods described above.

2. If Respondent chooses to propose background groundwater protection standards pursuant to Section IV.A.1.a. above, Respondent shall determine background as follows:

a. The groundwater monitoring system must consist of a sufficient number of wells installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer that represent the quality of background groundwater;

b. Each groundwater monitoring well must be cased in a manner that maintains the integrity of the monitoring well bore hole. The casing must be screened and packed with gravel or sand, where necessary, to enable Respondent to collect representative groundwater samples and minimize well siltation. The space between the bore hole and the well casing which projects above the sampling depth must be sealed to prevent contamination of samples and the groundwater. The well stick-up must be protected from damage by traffic or other potential harm; and

c. At least two sampling rounds shall be conducted in accordance with the sampling and analysis plan contained in the approved RFI Proposal.

3. If Respondent chooses to propose groundwater ACLs pursuant to Section IV.A.1.c. above, it shall submit support for the proposed ACLs in accordance with EPA guidance and a justification including, at a minimum, a detailed analysis of the following issues:

a. Potential adverse effects on groundwater quality, considering:

i. the physical and chemical characteristics of the hazardous waste and/or hazardous constituents released from any AC, including their potential for migration;

ii. the hydrogeologic characteristics of the Facility and surrounding land;

iii. the quantity of groundwater and the direction of groundwater flow;

iv. the location and withdrawal rates of groundwater users;

v. the current and future uses of groundwater in the area;

vi. the existing quality of groundwater, including other sources of contamination and their cumulative impact on groundwater quality;

vii. the potential for health risks caused by human exposure to hazardous waste and hazardous constituents;

viii. the potential damage to wildlife, crops, vegetation and physical structures caused by exposure to hazardous waste and hazardous constituents; and

ix. the persistence and permanence of the potential adverse effects.

b. Potential adverse effects on hydraulically-connected surface water quality, considering:

i. the volume and physical and chemical characteristics of the hazardous waste and/or hazardous constituents released from any AC;

ii. the hydrogeologic characteristics of the Facility and surrounding land;

iii. the quantity and quality of groundwater and the direction of groundwater flow;

iv. the patterns of rainfall in the region;

v. the proximity of the areas of concern to surface waters;

vi. the current and future uses of surface waters in the area and any water quality standards established for those surface waters;

vii. the existing quality of surface water, including effects of other sources of contamination and the cumulative impact on surface water quality;

viii. the potential for health risks caused by human exposure to hazardous waste and hazardous constituents;

ix. the potential damage to wildlife, crops, vegetation and physical structures caused by exposure to hazardous waste and hazardous constituents; and

x. the persistence and permanence of the potential adverse effects.

B. **Soil Protection Standards**

1. Respondent shall propose protection standards for each indicator chemical and/or hazardous waste and/or hazardous constituent released into the soil from an AC listed in Attachment II. Respondent shall use one or more of the following methods to set the standards:

a. The proposed soil protection standard for any hazardous constituent shall not exceed the background concentrations for that hazardous constituent at the time Respondent submits its proposal; or

b. Respondent may propose an ACL for each constituent associated with a release to soil. If Respondent chooses to propose a soil ACL, Respondent shall have the burden of establishing that the proposed ACL will not pose a substantial present or potential hazard to human health or the environment as long as the ACL is not exceeded; or

c. The proposed soil protection standards may be a combination of any of the methods described above.

2. If Respondent chooses to propose a background soil protection standard pursuant to Section IV.B.1.a. above, Respondent shall establish a soil sampling program consisting of a sufficient number of soil borings located at the appropriate locations and depths to represent background soil quality at or near the Facility and a justification for these numbers.

3. If Respondent chooses to propose a soil ACL pursuant to Section IV.B.1.b. above, its support and justification for the ACL shall include, at a minimum, a detailed analysis of the following issues:

   a. Assumptions for soil intake at all points of exposure, together with the basis therefore;

   b. Calculation of any contaminant exposures based on assumptions noted in Section IV.B.3.a. above. The total exposure to soil (ingestion, direct contact, etc.) shall be used in calculating the soil contaminant levels at the point(s) of exposure that will not result in exceedance of health based criteria for systemic toxicants or carcinogens for the most sensitive human population or critical environmental receptors, whichever is more sensitive; and

   c. In the absence of specific criteria, Respondent shall apply results from relevant and accepted human epidemiological studies or animal studies.

C. **Surface Water and Sediment Protection Standards**

1. Respondent shall propose protection standards for each indicator chemical and/or hazardous waste and/or hazardous constituents released into the surface waters and/or sediments from an AC listed in Attachment II. Respondent shall use one or more of the following methods to set the standards:

   a. The proposed surface water and sediment protection standard for any hazardous constituent shall not exceed the background concentration for that constituent at the time Respondent submits its proposal; or

   b. Respondent may propose an ACL for each hazardous constituent associated with a release to surface waters and/or sediments. If Respondent chooses to propose a surface water and sediment ACL, Respondent shall have the burden of establishing that the proposed ACL will not pose a substantial present or potential hazard to human health or the environment provided the concentration limit is not exceeded; or

   c. The proposed surface water protection standards may not exceed the federally approved water quality standards. The sediment protection

standards must be protective of human health or the environment and approved by the Director; or

d. The proposed surface water and sediment protection standards may be a combination of any of the methods described above.

2. If Respondent chooses to propose a background surface water and sediment protection standard pursuant to Section IV.C.1.a. above, Respondent shall locate surface water transects upgradient of all potential release sources to surface waters from the Facility. A sufficient number of surface water samples shall be collected at appropriate depths to represent the quality of background surface water and a justification for these numbers.

3. If Respondent chooses to propose a surface water and sediment ACL pursuant to Section IV.C.1.b. above, its support and justification for the ACL shall include, at a minimum, a detailed analysis of the following issues:

a. Intake assumptions for surface water and sediment at all points of exposure, together with the basis therefore;

b. Validation of the above assumptions by direct measurements. This validation should indicate the contaminant levels at the point of compliance that will result in surface water and sediment contaminant levels at all points of exposure that do not exceed health based criteria for systemic toxicants or carcinogens for the most sensitive human population or critical environmental receptors, whichever is more sensitive; and

c. In the absence of specific criteria, Respondent shall apply results from relevant and accepted human epidemiological studies or animal studies.

D. **Air Protection Standards**

1. Respondent shall propose protection standards for each hazardous waste and/or hazardous constituent released into the atmosphere from an AC listed in Attachment II. Respondent shall use one or more of the following methods to set the standards:

a. The proposed air protection standard for any hazardous constituent shall not exceed the background concentration for that hazardous constituent at the time Respondent submits its proposal; or

b. Respondent may propose an ACL for each hazardous constituent associated with a release to air. If Respondent chooses to propose an air ACL, Respondent shall have the burden of establishing that the proposed ACL will not pose a substantial present or potential hazard to human health or the environment provided the ACL is not exceeded; or

c. The proposed air protection standards may be a combination of any of the methods described above.

2. If Respondent chooses to propose a background air protection standard pursuant to Section IV.D.1.a. above, background shall be determined as follows:

a. Wind direction at the time of air monitoring is to be used to determine the direction of background air quality. The monitoring zone immediately upwind of the area affected by the Facility is the background zone;

b. Background air quality shall take into consideration primary daytime air flow path(s), primary nighttime airflow path(s), and prevailing seasonal air flow path(s).

3. If Respondent chooses to propose an air ACL pursuant to Section IV.D.1.b. above, its support and justification for the ACL shall include, at a minimum, a detailed analysis of the following issues:

a. Intake assumptions for air intake at all points of exposure, together with the bases therefor;

b. Calculation of any contaminant exposures based on assumptions noted in Section IV.D.3.a. above. The total exposure to air (inhalation, direct contact, etc.) shall be used in calculating the air contaminant levels at the point(s) of exposure that will not result in exceedance of health based criteria for systemic toxicants or carcinogens for environmental receptors, whichever is more sensitive; and

c. Validation of the above assumptions by both direct measurements and modeling calculations. This validation should indicate the air contaminant levels at the point of compliance that will result in air contaminant levels at all points of exposure that do not exceed health based criteria for systemic toxicants or carcinogens for the most

sensitive human population or critical environmental receptors, whichever is more sensitive.

d. In the absence of specific criteria, Respondent shall apply results from relevant and accepted human epidemiological studies or animal studies.

V. ESTABLISHMENT OF THE MEDIA PROTECTION STANDARDS

After Respondent submits the proposed media protection standards pursuant to Section IV above, EPA will set media protection standards so that Respondent can develop corrective measures as required below in Sections VI and VII.

VI. CORRECTIVE MEASURES STUDY PROPOSAL

Within thirty (30) days after Respondent receives a written notice from EPA which approves the RFI Report and sets the media protection standards as specified in Section V above, Respondent shall submit to EPA a Corrective Measure Study (CMS) Proposal. In the CMS Proposal, Respondent shall identify the corrective measures it proposes to study to achieve the media protection standards. This Proposal shall also justify the selection of the corrective measures that are proposed for study. The justification shall demonstrate the ability of the proposed corrective measures to achieve the media protection standards.

Respondent shall submit in the CMS Proposal a proposed schedule, not to exceed ninety (90) days, for the completion and submittal of the CMS Report. Upon approval of the CMS proposal by EPA, Respondent shall perform all the work contained therein and submit a CMS Report for EPA review and approval pursuant to the schedule in the approved proposal.

A. Changes to Corrective Measures Screening

The CMS Proposal shall indicate any changes to the findings and/or data needs outlined in the Corrective Measures Screening from Section I.C. including:

All additional corrective measures that may be appropriate for consideration in Facility clean-up; and

Documentation supporting the appropriateness of each measure for clean-up of contaminated media (e.g., manufacturers' tests, references of successful use of the technology for clean-up at other facilities).

B. **Corrective Measures to be Included in CMS**

1. The CMS proposal shall indicate which Corrective Measures will undergo further study. Respondent shall justify the choice of the corrective measures it intends to study by discussing:

   a. For each proposed Corrective Measure its ability to achieve the Media Protection Standards; and

   b. For each Corrective Measure identified in Section I.C. or Section VI.A. above that is not included for further study, why it would be unable to meet the Media Protection Standards or would be inappropriate for the Facility conditions.

VII. CORRECTIVE MEASURES STUDY REPORT

Within ninety (90) days after Respondent receives the approved CMS Proposal pursuant to Article VIII of the Order, Respondent shall submit to EPA a Corrective Measures Study (CMS) Report. The Respondent shall provide the following minimum information:

A. **Technical**

Respondent shall submit an evaluation of each corrective measure based on its performance, reliability, ease of implementation, timeliness, and safety. At a minimum, this evaluation shall include the following:

1. Respondent shall evaluate performance based on the effectiveness of the corrective measure and the projected service lives of its component technologies:

   a. Effectiveness shall be evaluated in terms of the ability to perform intended functions, such as protection by containment, diversion, removal, destruction, and/or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristics which could potentially impede effectiveness shall be identified. The evaluation shall also include discussion of the effectiveness of combinations of technologies; and

   b. For purposes of compliance with this Section, the projected service lives of the component technologies shall be compared against the length of time before compliance with the media protection standards can be maintained.

2. Respondent shall evaluate the reliability of each corrective measure including its operation and maintenance requirements and its demonstrated reliability:

   a. Operation and maintenance requirements shall be evaluated in terms of the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities shall be regarded as less reliable than technologies requiring little or straight forward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered; and

   b. Demonstrated and expected reliability shall be evaluated based on whether the technologies have been used effectively under analogous conditions; whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the site. Additionally, Respondent shall evaluate whether a pilot study would be advantageous.

3. Respondent shall evaluate the relative ease of installation and the time required for the corrective measure to comply with the media protection standards:

   a. Ease of installation shall be evaluated through a discussion of conditions both internal and external to the Facility, such as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the Facility (e.g., remote location vs. a congested urban area). Respondent shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities; and

   b. The time required for the corrective measure to comply with the media protection standards shall be evaluated in terms of the time it takes to install the corrective measure and the time it takes for the corrective measure to achieve compliance with the media protection standards.

4. Respondent shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include a discussion of threats to the safety of nearby communities and environments as well as those to workers during implementation. Factors that shall be considered include the probability of fire, explosion, and exposure to hazardous substances.

B. **Environmental**

Respondent shall assess the environmental impacts of each corrective measure. The assessment shall focus on Facility conditions and pathways of contamination actually addressed by each corrective measure. For each corrective measure, the short- and long-term beneficial and adverse effects shall be assessed, including impacts caused by the corrective measure.

Analyses of any potentially adverse effects on environmentally sensitive areas, and of any measures that may be employed to mitigate such adverse effects, shall also be included. The assessment shall address potential cross-media impacts (e.g., whether the alternative removes groundwater contamination, but creates air problems, or requires off-site disposal, etc.).

At a minimum, Respondent shall assess any potential adverse environmental effects that may result with regard to the Branch Brook, the Naugatuck River and the public trail that is behind and adjacent to the Respondent's landfill (AC #1).

C. **Human Health**

Respondent shall assess each corrective measure in terms of the extent to which it mitigates short- and long-term potential exposure to any residual contamination and protects human health both during and after implementation of the corrective measure. The assessment shall describe the levels and characterizations of contaminants on-site, potential exposure routes, and potentially affected populations. Each corrective measure shall be evaluated to determine the level of exposure to contaminants and the reduction over time.

Respondent shall assess any potential adverse health effects of corrective measures on sensitive areas including but not limited to the Branch Brook, Naugatuck River, and the public trail that is behind and adjacent to AC #1

D. **Institutional**

Respondent shall assess relevant institutional requirements for each corrective measure. This assessment shall include

a discussion of the effects of any relevant federal, state or local environmental or public health standards, regulations, and/or ordinances on the design, operation, and timing of each corrective measure alternative.

E. **Cost Estimate**

Respondent shall include an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital and annual operation and maintenance costs.

F. **Corrective Measure Assessment**

The CMS Report shall include an assessment as to which corrective measure alternatives could be pursued to meet the media protection standards. This assessment shall include an evaluation of how well these alternatives achieve the following objectives, considering limitations imposed by the character of the site, the wastes released, technological limitations, or other factors identified in Sections VII.A. through VII.D., above:

1. Compliance with the media protection standards set by EPA under Section V above at the locations specified therein;

2. Reliability of operation and maintenance;

3. The time period for achieving compliance with the media protection standards;

4. Any health and safety threats to the public during corrective measures implementation;

5. Any adverse impacts to the environment during corrective measures implementation;

6. Control of sources of releases so as to reduce or eliminate potential for future releases;

7. Reduction of toxicity, mobility, and/or volume; and

8. Protection of human health and the environment.

G. **Recommendation**

Respondent shall conclude the CMS Report with a recommendation as to which corrective measure, in

Respondent's opinion, is best suited to meet the media protection standards, in light of the criteria outlined in Section VII.F. above. Different corrective measures may be recommended for different AC.

VIII. INTERIM MEASURES

If at any time after the effective date of this Order, the Respondent becomes aware of any information concerning a release of hazardous waste or hazardous constituents from any AC at the Facility, including past releases that have not been reported to the EPA, the Respondent shall report such information within 14 days to the Regional Administrator. The following information shall be provided:

1. Type of area;

2. Topographic map identifying location of area;

3. Dimensions of the area;

4. Descriptions of wastes that were released from the area including known waste constituents;

5. Estimated quantity of each waste released and a description of how the quantity was calculated;

6. For spills, the zone of contamination of the area containing released wastes;

7. Proposed actions to clean up or mitigate the effects of the release; and

8. Potential receptors and their distance from release.

On the basis of this data, the EPA may require the Respondent to submit an interim measures plan which will be implemented upon EPA approval or modification. If the interim measures plan is modified by EPA, the modified plan becomes the approved interim measures plan which will be implemented by Respondent.

ATTACHMENT V

DESCRIPTION OF HAZARDOUS WASTES MANAGED

Pursuant to Section 3005 of RCRA, 42 U.S.C. Section 6925, Envirite submitted to EPA a Part A of a Hazardous Waste Permit Application dated November 14, 1980 and revised October 18, 1982. In these submissions, Respondent identified itself as handling the following hazardous wastes at the Facility, although the Facility has never handled liquid wastes K002, K003, K004, K005, K006, K007, K008, or K009:

EPA Hazardous Waste No.	Hazardous Waste	Basis for Listing
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; and (5) chemical etching and milling of aluminum.	Cadmium, hexavalent chromium, nickel, cyanide (complexed)
F007	Spent cyanide plating bath solutions from electroplating operations (except for precious metals electroplating spent cyanide plating bath solutions).	Cyanide (salts)
F008	Plating bath sludges from the bottom of plating baths from electroplating operations where cyanides are used in the process (except for precious metals electroplating bath sludges).	Cyanide (salts)
F009	Spent stripping and cleaning bath solutions from electro-plating operations where cyanides are used in the process (except for precious metal electroplating spent stripping and cleaning bath solutions).	Cyanide (salts)

F011	Spent cyanide solution from salt bath pot cleaning from metal heat treating operations.	Cyanide (salts)
F012	Quenching waste water treatment sludges from metal heat treating operations where cyanides are used in the process.	Cyanide (complex)
F015	Spent cyanide bath solution from mineral metals recovery operations.	Cyanide (salts)
F016	De-watered air pollution control scrubber sludges from coke ovens and blast furnaces.	Cyanide (complexed)
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum.	Hexavalent chromium, cyanide (complexed)
D001	Solid waste that exhibits the characteristic of ignitability as defined in 40 CFR § 261.21 (a)(4), but is not listed as a hazardous waste in Subpart D.	
D002	Solid waste that exhibits the characteristic of corrosivity, but is not listed as a hazardous waste in Subpart D.	
D003	Solid waste that exhibits the characteristic of reactivity, but is not listed as a hazardous waste in Subpart D.	
K061	Emission control dust/sludge from the primary production of steel in electric furnaces.	Hexavalent chromium, lead, cadmium
K062	Spent pickle liquor from steel finishing operations.	Hexavalent Chromium, lead
K063	Sludges from lime treatment of spent pickle liquors from steel finishing operations.	Chromium, lead
K069	Emission control dust/sludge from the secondary lead smelting.	Hexavalent chromium, lead, cadmium

K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	Hexavalent chromium, lead, cadmium

ATTACHMENT VI

DESCRIPTION OF AREAS OF CONCERN

On August 2, 1985, Envirite submitted a response to an EPA information request sent under the authority of Section 3007 of RCRA. This response identified eight separate areas of concern (AC): the acid/alkaline unloading area; the alkaline sludge unloading area; the former drum storage area; the storage and treatment area; the elevated sludge hopper; the metal hydroxide sludge dumpsters; the landfill (cells 1, 2, 3, 4, 5) and the waste pile. The ACs with releases to the environment were identified as: (1) Landfill, (2) Waste Pile containing industrial waste materials and (3) Storage and Treatment Area.

These units are described as follows (locations are shown in Attachment I):

(A) **AC #1 - Landfill:** This unit was in operation from November, 1976 through February, 1989. It consists of an unlined excavation divided into five cells that encircles the process building on the north, west and south sides. The landfill was used for the disposal of metal hydroxide sludges generated by the treatment facility.

(B) **AC #2 - Waste Pile:** Adjacent to the north portion of the landfill and northeast of the treatment and storage building, there is a pile of industrial wastes of unknown dimensions. The wastes, according to Respondent, consist of solvent and paint residues, which were deposited directly on the unprotected ground and covered by soil.

(C) **AC #3 - Storage and Treatment Area:** This area has been active since 1976 and is presently in use for the storage of untreated hazardous wastes and for the treatment of hazardous wastes. The dimensions of this area measure 120 feet by 100 feet. The Section 3007 information response submitted by Respondent on August 2, 1985 reported two spills in AC #3. The first spill occurred on February 1, 1978, releasing approximately 3,000 gallons of hydrochloric and nitric acid that escaped the containment area and flowed out of the building. The contaminated soils were neutralized with lime, excavated, and disposed of in the sludge landfill on-site. The second incident occurred on January 30, 1983, releasing 35,000 gallons of mixed (sulfuric, hydrochloric and nitric) acids of which 5,000 gallons escaped the containment area and flowed out of the building to the north and southwest. Lime was spread on the areas outside the building to neutralize the acids. The contaminated soils were excavated and transported off-site for disposal.

Appendix I

Information Requirements of the RFI Proposal for the Environmental Setting, Source and Contamination Characterization

A. Field Work/Environmental Setting

Proposals and completed tasks shall include a description of the procedures Respondent uses or intends to use to gather data sufficient to characterize site conditions. At a minimum, descriptions must show how the proposed or completed field work provides a reliable indication of site conditions. Descriptions shall include:

1. Soils and Subsurface Investigations

   i. The number and location of continuous test borings, test pits, or soil sampling points in relation to AC;

   ii. A justification for the horizontal spacing of the proposed boring network, test pits and/or sample points based on the complexity of the site geology and other relevant site characteristics such as contaminant profiles and considering other subsurface geophysical programs proposed by Respondent (i.e., seismic, ground penetrating radar, etc.);

   iii. The proposed procedures and depths for conducting each boring and sampling point and a justification showing the proposed procedures will provide a representative sample of soil, based on the geologic characteristics of the site and the parameters for which each sample is to be analyzed; and

   iv. The proposed design and procedures for each geophysical transect and a justification showing how the proposed design will provide a representative indication of the subsurface conditions of the site of each analysis.

2. Groundwater Investigations

   i. The number and location of observation wells and/or piezometers in relation to AC and a justification for their placement. This justification shall be based on the complexity of the site hydrogeology, relevant site characteristics, and other hydrogeologic investigation programs proposed by Respondent;

   ii. A description of, and justification for, the proposed piezometer and well-intake design, including depth, screen slot size, length, and diameter, filter-pack materials to minimize siltation, method of filter-pack emplacement, and well construction material; and a justification thereof:

iii. The proposed monitoring well installation and development procedures, and a justification therefor;

iv. The proposed methods that will be used to seal the well from surface runoff and to prevent downward migration of contaminants along the well annulus and upward migration of groundwater below the well screen;

v. The proposed design must be equipped with a locking cap to protect the well from potential harm, including without limitation that which may be caused by automobile traffic or construction equipment; and

vi. The proposed design of slug and/or pumping tests, as appropriate to determine hydraulic conductivity. The design shall include the reference for the method, a justification of the method, and the location of the test(s).

3. Surface Water and Sediment Investigations

i. A description of the methods for determining temporal and permanent surface water bodies including:

aa. the number and location of measurements and transects to determine the location, elevation, surface area, depth, width, volume, freeboard, seasonal fluctuations in flow rate, flood potential and state stream classification for rivers, streams, ditches, channels and impoundments as appropriate;

bb. the methodology to determine drainage patterns;

cc. the number and location of measurements to determine deposition area, thickness profile, and sediment transport; and

dd. the number and location of measurements and the methodology to determine physical parameters (e.g., grain size, density, etc.).

ii. A description of surface water and sediment characteristics, including, without limitation, the following:

aa. deposition area;

bb. physical and chemical parameters (e.g., grain size distribution, density, total organic carbon content, ion exchange capacity, pH); and

cc. seasonal variations in sediment transport.

4. Climatic Investigations

   i. The methodology to be used to determine the precipitation quantities and the temperatures at the site and to compare to annual and monthly average and extremes for the preceding thirty years; and

   ii. The number and location of measurements of wind speed and direction relative to each AC and to the Facility boundaries.

Appendix II

Information Requirements of the RFI Proposal for the Sampling and Analysis Program

A. Sampling and Analysis (General)

Sampling and analysis plans must be capable of yielding representative samples. The proposed sampling programs shall document the methodology to be used in obtaining the data necessary to provide the information required. The following elements are required, without limitation, of sampling plans, and must be specific, as applicable, for each media to be sampled and, as applicable, to field measurements.

1. At a minimum, proposals and completed tasks shall follow the specifications of the sampling plan which shall include the following:

   i. The methodology for measuring all necessary ancillary data;

   ii. Conditions under which sampling shall be conducted, and that ensures representative sampling of worst-case conditions (e.g., highest concentrations);

   iii. The methodology for determining which parameters are to be measured and where, and as required in Appendix II.C;

   iv. A description and justification for the proposed types of samples (e.g., grab samples) and number of samples to be collected;

   v. The methodology to determine the number of field measurements necessary to give statistically significant results;

   vi. Procedures and forms for recording raw data and the exact location, time and Facility-specific considerations associated with the data acquisition;

   vii. Field screening of samples (OVA, HNU, XRF, etc.), and documentation of screening methods;

   viii. Proposed procedures for collecting replicate measurements;

   ix. The sample collection frequency and length of sampling period and justification thereof;

   x. Procedures for decontamination of sampling equipment between sampling events;

xi. Proposed analytical techniques and detection limits, to conform to EPA-approved analytical methods (e.g., Test Methods for Evaluating Solid Waste, SW 846, Third Edition, September 1986) and established in SW 846 including:

aa. the scope of application of the procedure;

bb. a sample matrix;

cc. any potential interferences;

dd. the precision and accuracy of the methodology;

ee. data reduction, validation and reporting;

ff. proposed internal quality control checks, laboratory performances and systems audits including audit frequency; and

gg. proposed preventive maintenance procedures and schedules.

xii. Sample handling and preservation techniques (e.g., holding times and sample containers), including provisions for field-filtration of samples as appropriate;

xiii. Field and laboratory QA/QC including procedures for calibrating field devices and for documenting calibration and results;

xiv. Provisions for providing timely notification of each sampling event to EPA and for providing EPA with split samples;

xv. Proposed chain of custody procedures including provisions to standardize field tracking report forms, to establish sample custody in the field prior to shipment, and containing all information necessary for effective sample tracking by including:

aa. identification of a responsible party to act as sample custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipments and verify the data entered onto the sample custody records;

bb. provisions for a laboratory sample custody log consisting of serially numbered standard lab-tracking report sheets; and

cc. laboratory sample custody procedures for sample handling, storage and disbursement for analysis.

B. **Sampling and Analysis [Media Specific Protocol]**

1. At a minimum, the sampling parameter proposal shall include a sufficient number of complete Appendix IX analyses to characterize the soil. Additionally, it shall include a list of sampling parameters to be tested for at each AC and each media of concern listed or proposed to be listed in Attachment II. The soil sampling specifically shall follow the specifications developed from Appendix I.A.1 and Appendix II.A. and shall also include:

   i. The proposed procedures for obtaining soil samples, and a justification showing the proposed procedures will provide a representative sample of soil, based on the geologic characteristics of the site and the parameters for which each sample is to be screened and analyzed;

   ii. Procedures to verify whether or not contamination has occurred; and

   iii. A proposed method for data organization and presentation.

2. At a minimum, proposed groundwater sampling specifically shall follow the specifications developed from Appendix I.A.2. and Appendix II.A. and shall also include:

   i. Well evacuation procedures, including volume to be evacuated prior to sampling and handling procedures for purged well water;

   ii. Sample withdrawal techniques and sampling equipment and materials (tubing, rope, pumps, etc.) shall be selected to yield representative samples in light of the parameters to be monitored. The sampling protocol shall include field measurements of pH, conductivity and temperature for each sample, and a check to determine whether immiscibles are present in wells;

   iii. Procedures for measuring groundwater elevations within a 24 hour period prior to each sampling event and a methodology to screen for anomalous readings and to screen for tidal influence or barometric pressure effects, if any; and

iv. Procedures to verify whether or not contamination has occurred, including:

aa. a proposed method (statistical or otherwise) for comparison of upgradient and downgradient well water that provides a reasonable balance between the probability of falsely identifying and failing to identify contamination; and

bb. a proposed method for data organization and presentation.

3. At a minimum, proposed surface water and sediment sampling specifically shall follow the specifications developed from Appendix I.A.3. and Appendix II.A. and shall also include:

i. Sample withdrawal techniques and sampling equipment and materials (dippers, scoops, rope, pumps, etc.) shall be selected to yield representative samples in light of the parameters to be monitored for. The sampling protocol shall include field measurements of pH, conductivity, and temperature for each sample and also a check to determine whether immiscibles are present;

ii. Procedures for measuring surface water elevations within a 24 hour period prior to each sampling event and a methodology to measure water levels during high flow episodes; and

iii. Procedures to verify whether or not contamination has occurred, including:

aa. a proposed method (statistical or otherwise) for comparison of upgradient and downgradient water quality that provides a reasonable balance between the probability of falsely identifying and failing to identify contamination; and

bb. a proposed method for data organization and presentation.

4. At a minimum, air sampling specifically shall consider the information developed from Appendix I.A.4. and Appendix II.A. and shall also include:

i. A plan for an ambient air modeling program designed to determine maximum ambient concentrations and/or maximum impact locations of air contaminants at the Facility boundaries. Models and modeling protocol proposed shall be in accordance with the Superfund Public Health Evaluation Manual (October 1986) and the "Rapid

Assessment of Exposure to Particulate Emissions from Surface Contamination Sites" (Cowherd, et al., 1984);

ii. A plan for the design and installation of an ambient air monitoring network capable of determining the emission rate and concentration of hazardous waste and/or constituents in the ambient air. This plan shall include the following elements:

aa. a proposal for direct measurement to screen for a possible air release at the unit using such technologies as stain detector tubes or portable survey instruments (Photovan 10A10);

bb. a discussion of the proposed methodology for determining the location of each monitor to measure for maximum impact of contaminants on-site, at the Facility boundary, and off-site providing access is granted to the owner/operator;

iii. A methodology for reporting releases to EPA. At a minimum, the report shall include all raw data collected during the investigations which indicates a release, all calculations performed therewith, and an interpretation of the data indicating the severity of the release;

iv. A plan which sets action levels for the hazardous wastes and/or hazardous constituents potentially released from the AC listed in Attachment II, and responses to those levels if and when they are exceeded. In the case that the action levels are exceeded, the plan shall provide for the coordination with appropriate city officials to safeguard workers and the local population; and

v. A proposed method for data organization and presentation.

C. **Sampling Parameters**

The RFI Proposal shall include proposed sampling parameters for media specific sampling programs designed to measure the concentration and extent of hazardous waste and/or hazardous constituents released from the AC listed in Attachment II or proposed to be listed to Attachment II pursuant to Section I.A.4 above into the groundwater, soil, surface waters, bedrock, sediments and air.

1. At a minimum, the sampling parameter proposal shall include a sufficient number of complete Appendix IX analyses to characterize the groundwater. Additionally, it shall

include a list of sampling parameters to be tested for at each AC and each media of concern listed or proposed to be listed in Attachment II. The sampling parameters shall be chosen from Appendix IX and include parameters for each AC based on a consideration of the following to the degree that they differ:

i. Data generated pursuant to Section I.D.2. concerning the types, quantities and characteristics of wastes managed at the Facility;

ii. The results of the Appendix IX analyses;

iii. Known or suspected natural variation of the parameters in background samples from each media;

iv. Detection limits for the parameters in each media; and

v. Suitability of each parameter (as appropriate) for use as an indicator during the contamination characterization of Section I.D.3.

2. In addition to the parameters from the above Section, groundwater sampling parameters shall also be sufficient to characterize the specific chemistry of groundwater at the Facility, including but not limited to the major anions and cations that make up the bulk of dissolved solids in water (i.e., Cl-, Fe, Mn, Na^{+}, SO_{4-2}, Mg^{+2}, K^{+}, NO^{-3}, PO_4^{-3}, H_2SiO_3, NH_4^{+}), pH, specific conductance, and total organic carbon.

3. In addition to the parameters from Section C.2. above, surface water sampling parameters shall also be sufficient to characterize the chemistries of the surface water and sediments. This includes but is not limited to the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients (NH_3, NO_3-/NO_2-), PO_4^{-3}, chemical oxygen demand, total organic carbon and specific contaminant concentrations, as applicable.

4. The air quality characterization shall be determined by the contaminants detected from Appendix IX analyses in the soil, surface water and groundwater to determine if any releases have occurred from the AC listed in Attachment II.

5. Respondent shall justify its list of sampling parameters for each AC listed in Attachment II. If Respondent proposes indicator parameters during contamination characterization one indicator must be shown to be representative of substances at least as mobile as the most mobile constituent that could be derived from the Facility's waste, and which is not a constituent from other sources, and another must be

shown to migrate at least as slowly as the least mobile constituent that could be derived from the Facility's waste and which is not a constituent from other sources. Final determinations on the extent of contamination are to be based on a complete analyses of all known waste constituents.

Appendix III

Information Requirements of the RFI Proposal for the Public Health and Environmental Risk Evaluation

The Phase I RFI Proposal shall include a proposed Public Health and Environmental Risk Evaluation (PHERE) designed to identify the human and wildlife populations and environmental systems that may be exposed to hazardous waste and/or hazardous constituents released from the AC as identified in the Findings of Fact Section of this Order. The proposed PHERE shall document the methodology for obtaining data and drawing conclusions to provide the types of information required in subsections (a) through (e) below. The proposal may utilize, in part, the "Superfund Public Health Evaluation Manual" (latest edition) and the USEPA Region I "Draft Final, Supplemental Risk Assessment Guidance for the Superfund Program," June, 1989 (or latest edition).

A. At a minimum, the proposed PHERE shall include the following:

1. A proposal for identifying exposure pathways, which shall include consideration of the following:

i. Chemical release sources and affected media;

ii. Local current uses and possible future uses of groundwater, including:

aa. type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/nonpotable, and industrial);

bb. location of groundwater users including wells and well discharge areas; and

cc. aquifer classification within 2,000 feet of the Facility boundary.

iii. Local current and potential future uses of surface waters draining the Facility, including:

aa. domestic and municipal uses (e.g., potable and lawn/gardening watering);

bb. recreational uses (e.g., swimming, fishing);

cc. agricultural uses (e.g., crops, farm animals);

dd. industrial uses;

ee. environmental uses (e.g., fish and wildlife propagation); and

ff. Connecticut stream classification including connecting surface waters.

iv. Current and potential future human use of or access to the Facility and adjacent lands, including but not limited to:

aa. recreational uses (including hunting, fishing, swimming, etc);

bb. residential uses;

cc. commercial/industrial uses; and

dd. agricultural uses (e.g., crops, farm animals).

v. The relationship between population locations and the prevailing wind direction;

vi. A description of the biota in surface water bodies on, adjacent to, and or affected by the Facility;

vii. The presence of sensitive human and environmental populations, including without limitation the following:

aa. the Branch Brook, the Naugatuck River and the Blue Trail (this is a public pathway that is behind and adjacent to AC #1).

bb. a description of any endangered or threatened species in the vicinity of the Facility; and

viii. The methodology for the integration of all release sources and environmental transport media, into exposure pathways.

2. A proposal for identifying indicator chemicals to be used in evaluating public health and environmental risk at exposure points. The proposal shall provide that these chemicals shall be selected in accordance with the "Superfund Public Health Evaluation Manual" (latest edition) and the USEPA Region I "Draft Final, Supplemental Risk Assessment Guidance for the Superfund Program," June, 1989 (or latest edition).

3. A proposal for estimating exposure point concentrations for the indicator chemicals referenced in Section A.2. above, which shall include at least the following:

i. quantity of chemical releases;

ii. predictions as to environmental rate and transport of all releases including information in Section A.1. above; and

iii. the methodology for the integration of release sources for each medium of concern, environmental transport media, exposure points and exposure routes into the potential exposure pathways.

4. A proposal for comparing the estimated exposure point concentrations referenced in Section A.3. above to the following requirements, standards, and criteria, where applicable and appropriate:

i. Maximum Contaminant Levels;

ii. EPA Verified Reference Doses (RfD);

iii. Risk Specific Doses (RSD) based on Carcinogen Potency Factors;

iv. Connecticut Drinking Water Standards;

v. National Ambient Air Quality Standards;

vi. Connecticut Water Quality Standards;

vi. Connecticut Air Quality Standards;

vii. Drinking Water Health Advisories;

viii. National Academy of Science Advisories;

ix. World Health Organization Advisories; and

xi. Other relevant criteria (e.g., those based on research literature, state criteria, etc.).

5. For those indicator chemicals for which there are no requirements, standards, or criteria applicable under Section A.4. of this Appendix, the proposed PHERE shall include a proposal which includes the following:

i. a technique for determining the chemical intake of the contaminant(s) in groundwater, soil, surface water/or sediments, and air, as well as a technique for integrating total oral, dermal, and inhalation intakes from all media;

ii. a methodology for assessing the toxicity of the contaminant(s) with regard to non-carcinogenic, (chronic, subchronic and acute) and carcinogenic effects;

iii. a methodology for characterizing non-carcinogenic (chronic, subchronic and acute) and carcinogenic effects, as well as for identifying the uncertainties inherent in the proposed methodology; and

iv. a methodology for risk integration (i.e. comparing intake levels to health based criteria.)

Appendix IV

A. CURRENT ASSESSMENT SUMMARY REPORT

1.0 INTRODUCTION
- 1.1 Historical On-Site Hazardous Waste Activities
  - 1.1.1. List of current SWMU's and AC's
    - 1.1.1.1 Previous occupants of site
  - 1.1.2 Landfill AC # 1
    - 1.1.2.1 General
    - 1.1.2.2 History
    - 1.1.2.3 Wastes Managed
  - 1.1.3 Waste Pile AC # 2
  - 1.1.4 Storage and Treatment Facility AC #3
    - 1.1.4.1 Current Treatment Processes
    - 1.1.4.2 Former Treatment Processes
    - 1.1.4.3 Facility Interior
  - 1.1.5 Exterior Storage Areas
    - 1.1.5.1 Acid/Alkaline Unloading Area
    - 1.1.5.2 Alkaline Sludge Unloading Area
    - 1.1.5.3 Elevated Sludge Hopper
    - 1.1.5.4 Former Drum Storage Area
    - 1.1.5.5 Metal Hydroxide Sludge Storage Area
  - 1.1.6 Acid Spills
    - 1.1.6.1 February 1978 Spill
    - 1.1.6.2 January 1983 Spill
  - 1.1.7 Air Vents
- 1.2 Future On-Site Activities
- 1.3 Review of Pre-Envirite Historical Reports
- 1.4 Review of Envirite Historical Reports
- 1.5 Site Permits
  - 1.5.1 Wastewater Discharge Permit
  - 1.5.2 Solid Waste Disposal Permit
  - 1.5.3 Hazardous Waste Permits
  - 1.5.4 Air Permits
- 1.6 Purpose of Investigation

2.0 SITE DESCRIPTION
- 2.1 Facility Location
  - 2.1.1 Site Mapping
  - 2.1.2 Area Mapping
- 2.2 Facility Operational Buildings
- 2.3 Adjacent Land Use

3.0 TOPOGRAPHIC FEATURES
- 3.1 On-Site Features
  - 3.1.1 Natural
  - 3.1.2 Man-made
- 3.2 Off-Site Features, One Mile Radius of Facility
  - 3.2.1 Natural
  - 3.2.2 Man-made

4.0 CLIMATOLOGY
- 4.1 Regional Conditions
  - 4.1.1 Western Connecticut Provenance
- 4.2 Local Conditions
  - 4.2.1 Monthly an Annual Precipitation Means for Previous 15 years
    - 4.2.1.1 Bridgeport Data
    - 4.2.1.2 Hartford Data
  - 4.2.2 Monthly Means and Range of Air Temperatures for Previous 15 years
    - 4.2.2.1 Bridgeport Data
    - 4.2.2.2 Hartford Data
  - 4.2.3 Monthly an Annual Wind Rose and Direction for Previous 5 years

5.0 SOILS
- 5.1 Soils Classification
  - 5.1.1 Regional Soil Types
  - 5.1.2 On-Site Soil Types

6.0 GEOLOGY
- 6.1 Regional
  - 6.1.1 Overburden
    - 6.1.1.1 Glacial Till
    - 6.1.1.2 Stratified Drift
  - 6.1.2 Bedrock
- 6.2 Site-Specific
  - 6.2.1 Overburden
    - 6.2.1.1 Glacial Till
    - 6.2.1.2 Stratified Drift
    - 6.2.1.3 Fill
  - 6.2.2 Bedrock
    - 6.2.2.1 Strike and Dip
    - 6.2.2.2 Structural

7.0 HYDROGEOLOGY
- 7.1 Regional
  - 7.1.1. Overburden
  - 7.1.2 Bedrock
- 7.2 Site-Specific
  - 7.2.1 Overburden
  - 7.2.2 Bedrock

25.4 Surface Water Quality
- 25.4.1 Branch Brook
  - 25.4.1.1 Upstream
  - 25.4.1.2 Downstream
- 25.4.2 Naugatuck River
  - 25.4.2.1 Upstream
  - 25.4.2.2 Downstream

25.5 Groundwater Flow
- 25.5.1 On-Site
  - 25.5.1.1 Overburden
  - 25.5.1.2 Bedrock
- 25.5.2 Off-Site
  - 25.5.2.1 Overburden
  - 25.5.2.2 Bedrock

25.6 Contaminant Plume Delineation
- 25.6.1 Rate Extent and Degree
  - 25.6.1.1 On-Site
    - 25.6.1.1.1 Overburden
    - 25.6.1.1.2 Bedrock
  - 25.6.1.2 Off-Site
    - 25.6.1.2.1 Overburden
    - 25.6.1.2.2 Bedrock
- 25.6.2 Surface Water
  - 25.6.2.1 Upstream
  - 25.6.2.2 Downstream
- 25.6.3 Soils
  - 25.6.3.1 On-Site
  - 25.6.3.2 Off-Site